HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

June, 1934

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Are Doctors People?

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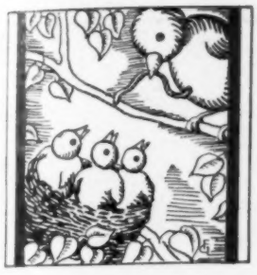
HYGEIA•



THE HEALTH MAGAZINE

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CONTRIBUTORS TO THIS ISSUE

● DR. EDGAR F. KISER discusses the revolutionary changes in medicine and the elimination of guesswork effected by various instruments of precision. . . . SARA HAARDT (MRS. H. L. MENCKEN), who is well known in literary circles, gives a layman's evaluation of physicians, past and present. . . . DR. PARK J. WHITE, whose articles and poems have frequently appeared in HYGEIA, holds the mirror of truth up before the layman and shows how the layman frequently misinterprets the physician's motives.

● DR. HERBERT L. HERSCHENSOHN gives an appreciation and explanation of the work of the greatest team on earth—the family physician and the specialist. . . . MURIEL DEMILLE ALDEN offers an entertaining bit of summer fiction. . . . ELLIOTT R. WEYER deals with such timely subjects as hay fever, rose fever, strawberry rash and other allergic manifestations.

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JUNE, 1934

EDITORIAL

Health Education at the Exposition

A CENTURY OF PROGRESS will again open its gates to the public from May to November, 1934. The evidence is profuse that many hundreds of thousands of people learned during last year's exposition to appreciate the progress that medical science has made.

Many persons acquired a fundamental knowledge of the functions of their own bodies —a type of information that would have come to them in the schools had they been educated in the present decade rather than in a previous generation. For the person who really wishes a basic knowledge of the nature of the human body and of its functions, a few weeks spent at the exposition provides the information in the most dramatic, instructive and interesting form ever made available in this country. He may begin with the skeleton itself and view demonstrations showing the organization of the muscles, the nervous system, the blood vessels, the digestive tract and every other tissue of the body. He may see the growth of the teeth, the development of decay and the methods used by dental science to provide sound teeth in the healthy body. He may observe the mechanisms of the larynx, of the human eye, of the ear, nose and throat, and of all the other organs. Furthermore he may even see the development of the prospective child within the body of his mother and learn about the steps necessary to insure the birth of a healthy child.

A CENTURY OF PROGRESS, however, goes far beyond these fundamentals in its demonstration of what medicine has done and is doing for the public health. The development of the science of nutrition is shown in models, demonstrations and charts that make the ABC of nutrition understandable not only so far as concerns the vitamins—the topic of current interest—but also the mineral salts, proteins, carbohydrates, fats and caloric values. The methods used by public health officials for many types of epidemic disease will be elucidated in the exhibits of the U. S. Public Health Service and in exhibits by various state and local health departments. The prevention of goiter, the prevention and treatment of diabetes, the rehabilitation of the handicapped, the care of the convalescent with heart disease or with rheumatic disorders, and the control of infantile paralysis are all problems that will be demonstrated in special exhibits. Many of the leading universities will show the research work on which their investigators are actually engaged at the present time.

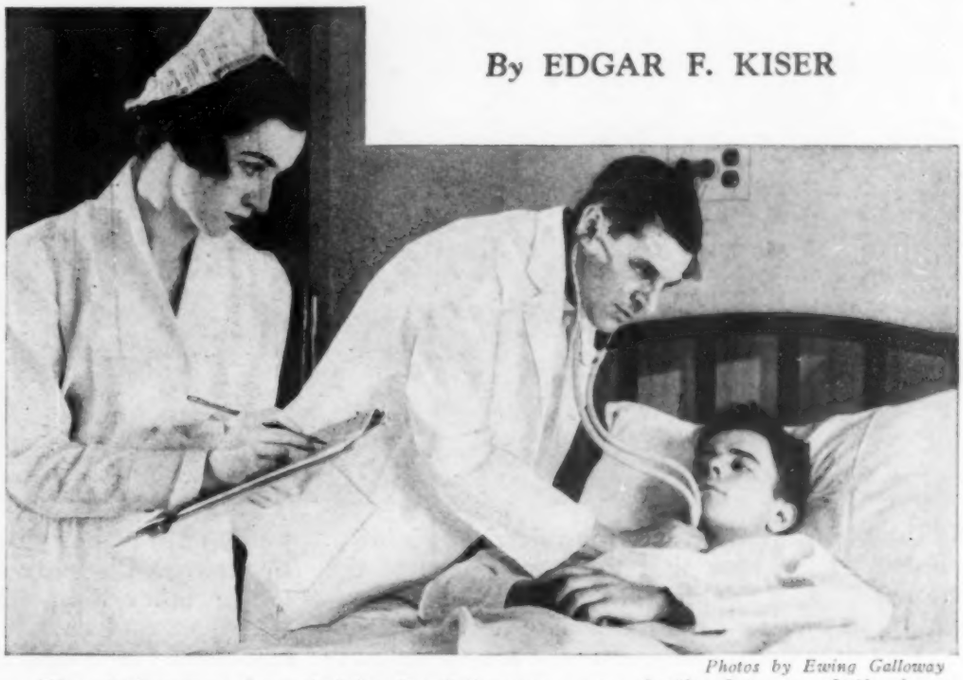
ONE OF the most important features of the demonstrations at A Century of Progress are those exhibits that trace the history of epoch-making discoveries in medical science. As a part of the exhibit of the American Medical Association there are models indicating the history of anesthesia, asepsis, surgery, the germ causation of disease, the physiology of digestion, the circulation of the blood, and many other notable discoveries. In other exhibits there are dioramas and motion pictures which present the history of medicine from various points of view. Some of the exhibits are concerned primarily with demonstrating to the public the manner in which the medical profession frees mankind from the fear of pain, disease and death and devotes itself whole-heartedly to human service.

A bizarre interest is associated with the curiosities of physiology portrayed in various sections of the exposition. The human being with an elastic skin, the colored individual turning white, the child born without arms, men and women with remarkable growths of hair, skin that is insensitive to pain, bodies slowly calcifying because of disorders of various glands, persons with extra fingers and toes and others with remarkable tumor growths on various portions of the body, indeed a wide range of remarkable changes that may occur in human beings in association with disorders of development brings to the general observer some of the fascination of the unusual that is provided by a study of medical science. Giants and dwarfs, persons who are fat and those who are thin, persons of extraordinary strength, and innumerable other specimens of what nature does when it goes on the rampage are here assembled for the wonderment of those who try to understand nature's ways.

THE OUTSTANDING effect of the exposition of last year was its ability to reveal new methods of educating the public in science by moving devices and by new types of appeal to the eye and the ear. The advances of last year have been carried forward. Parents owe it to their children to give them the opportunity for education afforded by this type of exposition in a manner that is not likely to be available soon again.

The Workshop of Aesculapius

By EDGAR F. KISER



Photos by Ewing Galloway

The stethoscope, invented by René Laennec, was destined to revolutionize the practice of medicine.

PROGRESS in the applied arts and sciences is in large measure commensurate with advance in the development of the machinery employed in practice. One need only look about at the tremendous strides made within the past few decades in the automotive industry, in modes of communication, in wireless transmission, in all phases of electrical development, to appreciate this relationship between improved machinery and increased accomplishment.

The revolutionary changes in medicine, more particularly in diagnosis, and the elimination of much of the guess work of the physician of the very recent past are in a like manner due largely to the development of instruments of precision for the study of the pathologic processes known as disease.

Under the caption "A Doctor's Wife Speaks Up," an anonymous writer in *Harper's Magazine* for February, 1932, says, "The internist today can see and hear and suspect just as the doctor of thirty years ago, but he cannot be content with probabilities when our newer methods of examination may make them certainties. Where he can have his suspicions confirmed or dispelled he must as an honorable scientist ask for data more accountably collected." The layman is no longer content with the service of a physician who looks at the tongue, feels the pulse and writes a prescription. He knows full well the numerous devices that are available for examining minutely the various parts of the body, and he very properly expects them to be employed in the doctor's examination.

While "clinical sense" is still the most valuable asset of the skilled physician, yet the application of any instrument which, literally as well as figuratively, extends the vision of the examiner, works for more careful and more intelligent medical service.

The use of instrumental aids in diagnosis is by no means new. While a youth in Pisa, Galileo, whose name is usually associated with the invention of the telescope, sat in the great cathedral, wool gathering, even as you and I, during the reading of the liturgy. He noticed the rhythmic sway of the great chandelier and noted also that the rhythm of its swing was synchronous with the beating of his pulse. He seized on the practicability of the idea and devised an apparatus which incorporated an adjustable pendulum, the "pulsilogium" of the physician of the seventeenth century. In 1707, Floyer, an Englishman, devised a special watch for the accurate timing of the pulse.

The first clinical thermometer is ordinarily attributed to Sanctorio Sanctorio, an Italian, popularly known to medical historians as Sanctorius. Physicians had long recognized variations in body temperature in the course of disease, but Sanctorius first attempted to measure these variations by means of a glass tube filled with an expansible liquid. He was also the first to attempt experiments in body metabolism which today play such a large part in the determination of diseases of the glands of internal secretion.

The principles of physics have long been the basis of the methods employed in the examination of the body for evidence of disease. The familiar tapping of the chest, or percussion, grew out of the observation of a Styrian youth, Leopold Auenbrugger, whose father, a vintner, was wont to determine the level of wine in a cask by tapping on the cask and noting the sound. Auenbrugger, the physician, noting fluid

The x-ray examination is but a small part of a broad and comprehensive diagnostic plan.

in the pleural cavity of a man dead of pleurisy, conceived the idea that the application of the same principle might make possible the determination of fluid in the chest before death.

A similar happy accident was responsible for the invention of the familiar stethoscope. René Théophile Hyacinthe Laennec, a young Frenchman, was called on to examine the chest of an obese and none too cleanly woman. Hesitating to place his ear against her rather repulsive body, he recalled that children in the street "telegraph" to one another by tapping at one end of a wooden pole and listening at the other. He seized a heavy sheaf of paper, rolled it into a cylinder, placed one end against the chest of his patient and his ear against the other, and much to his astonishment and delight found that he could hear the heart and breath sounds far better than with the naked ear. That was the first stethoscope.

"Then," writes Victor Robinson, "René Laennec heard the language of pathology. A diseased heart appealed to him for aid. Injuries that for centuries had been inaudible now found a voice. A sick organ murmured its tale of woe into the ear of a great and sympathetic physician. Auscultation, the crowning glory of physical diagnosis, came into existence." Laennec developed the idea, experimenting with various materials, and soon he perfected and popularized the instrument that was destined to revolutionize the practice of medicine. Poor Laennec! He died at 45, a victim of pulmonary tuberculosis, the study of which his invention had so much enhanced. But before his death he had written his epoch-making "Traité de l'Auscultation Mediate," perhaps as great in its influence on medicine as any single work ever published.

From such humble forebears came the instruments of precision now used in the examination of patients. Their number is now legion, and the refinements in diagnosis that they have made possible are indeed remarkable. The microscope, colorimeter, spectroscope and incubator, these together with the rabbit and the guinea-pig, are the implements of a highly specialized department of medicine. They deal not directly with the patient but rather with his secretions and excretions; with his body chemistry; with his physiology rather than with his anatomy. But the extensive and complex apparatus of the laboratory is not within the scope of this paper, and I shall confine my discussion to the more common instruments which the doctor employs in the actual physical examination of the patient.

The story of the determination of the blood pressure is an interesting chapter in the history of medicine. In 1708, Stephen Hales, an English clergyman, measured the pressure exerted by the rise of the sap in trees; and a little later, by inserting a glass tube into an artery in the leg of a horse, he noted the rise of the blood in the tube, with each contraction of the heart. He describes his experiment:

> In December I caused a mare to be tied down alive on her back; she was fourteen hands high, and about fourteen years of age, had a Fistula on her Withers, was neither very lean, nor yet lusty. Having laid open the left crural artery about three inches from her belly, I inserted into it a brass pipe, whose bore was one-sixth of an inch in diameter; and to that, by means of another brass pipe which was fitly adapted to it, I fixed a glass tube of the same diameter, which was nine feet in length. Then untying the ligature in the artery, the blood rose in the tube eight feet three inches perpendicular above the left ventricle of the heart.

That was a pretty piece of work for a layman of the early eighteenth century. Hales's experiments were followed more than a century later by those of a young Frenchman, Jean Leonard Marie Poiseuille, who in his graduating thesis in 1828 reported a repetition of Hales's experiments with an apparatus in which he substituted a mercury manometer for the long brass tube.

The first application of the principle to the determination of the blood pressure of man was

made by Faivre in 1856. He connected the femoral artery to a mercury manometer and recorded the pressure as 120 millimeters of mercury (120 mm. Hg). Later, through the work of Riva-Rocci, Faught, Rogers, Baumé and many others, the present-day instruments were developed. Of such great moment is the determination of the blood pressure that Johannes Mueller, the famous German physiologist, is quoted as having said that "the discovery of the blood pressure was more important than the discovery of the blood."

In recent years the measurement of the pressure of the spinal fluid has likewise assumed an important clinical rôle and has made more certain the diagnosis of the diseases of the brain and spinal cord and their coverings.

The work of Sir James Mackenzie looms large in the annals of medicine. An obscure Scottish country practitioner, he noted in his daily examinations the variations in the rhythm of the pulse. He pondered the significance of these irregularities. Some patients so afflicted were little the worse for the peculiarity, while others were obviously quite ill. Surely there must be various causes for the phenomenon. So Sir James set about to investigate the causes of cardiac irregularities. He had no elaborate apparatus and no staff of technical assistants, but he had a mind capable of serious thought and intelligent analysis, and so with untiring zeal, in the humble cottages of the Scotch Highlands, he studied and recorded the conditions as they were presented in various patients. Marey, a Frenchman, had devised a mechanical contrivance for graphically recording the pulse beat. It consisted of a small lever activated by the pulsations of the superficial artery at the wrist. The graph was traced on a strip of paper which had been heavily covered with the thick smoke made by burning camphor gum. The instrument was large and cumbersome and not well adapted to use outside the hospital. Mackenzie worked until he had produced a practical instrument for bedside use. This he gradually improved until he could get simultaneous records from the artery at the wrist, the great vessels of the neck and the apex beat of the heart. His resulting graphs were a veritable Chinese puzzle; but he labored long and patiently, and out of chaos there finally came order and with it an understanding of cardiac irregularities that fairly revolutionized the study of heart disease.

Close on the heels of Mackenzie's polygraph came that wonder of wonders, the electrocardiograph. This instrument provides a way for the heart actually to write its own autograph. As early as 1889, Waller showed that the contraction of the muscle fibers of the heart produced a measurable current of electricity. In 1902, Einthoven, a Dutch physiologist, devised a string galvanometer, the moving part of which was a thread of quartz plated with silver, so sensitive as to react to the minute currents produced by this muscle contraction. A moving photographic film served to record the deflections of the string. The instrument was, as may well be imagined, exceedingly intricate and was at best a most interesting piece of laboratory apparatus. Then came the World War with its 29 million young men gathered from every quarter of the globe, thousands presenting heart lesions of varying kind and degree. Again necessity became the mother of invention. Through the efforts of Sir Thomas Lewis of London, Professor Williams of Columbia University and numerous other scientists and physicians, the electrocardiograph was developed into a relatively simple, practical, usable machine, and it now forms a part of the armamentarium of every well equipped hospital and cardiac specialist's office. Whereas the stethoscope tells the trained physician the condition of the valves of the heart, this instrument writes for him a picture which tells accurately and unerringly the condition of the all-important heart muscle. It has enabled the physician to diagnose that dread malady, coronary sclerosis, which has long masqueraded as "acute indigestion" and has caused the untimely death of thousands of able men in the very prime of life.

Every one has seen in the corridor of a medical arts building a doctor with a huge glass eye perched in the middle of his forehead. He is an otorhinolaryngologist, a nose and throat specialist. However, it is not the wearer but the glass eye that interests us here. The man who put the hole in the middle of that concave mirror rendered humanity almost as great a service as did Elias Howe when he moved the eye toward the point of the sewing machine needle. The head mirror revealed a new world

The head mirror revealed a new world to the inquiring eye of the physician.

to the inquiring eye of the physician. Many a turbinate that was born to blush unseen has been brought to the light of day by the reflected rays of this mirror, and millions of tonsils have been sentenced to the guillotine, brought to an untimely end through the stare of this modern cyclops. The head mirror made practicable the visual examination of the superficial cavities of the body. Then Killian saw the feasibility of introducing into the esophagus and trachea a suitable metal tube so that the rays of light might be reflected into these deeper cavities. Finally it occurred to some brilliant mind to place a tiny electric bulb at the distal end of the tube, and this opened an entirely new field of exploration. Now instruments are made which illumine and make available for direct inspection virtually all the deeper cavities. Ingenious knives, scissors and forceps have been devised which may be introduced through these lighted tubes, or endoscopes, and the removal of foreign bodies or new growths from the esophagus, trachea, bronchi, bladder and other hollow viscera is a common procedure.

The ophthalmoscope is familiar to every one. With it the physician examines a patient not only for faulty vision but also for evidence of bodily disease that may be manifest in the deeper structures of the eye. Arteriosclerosis, Bright's disease and diabetes are especially prone to show marked evidence of their presence in the retina, and the progress of these disorders may often be more accurately gaged by examination with the ophthalmoscope than by any other means.

The next part of my story concerns a diagnostic measure which rivals the seven wonders of the ancient world. The ever widening scope of the x-rays in the study of disease is one of the most astounding stories of medicine. The discoverer, Wilhelm Konrad von Roentgen, born of a German father and a Dutch mother, was a physicist of rather mediocre caliber, who hit on the peculiar ray quite by accident while working with a Crookes's tube. On Dec. 28, 1895, he reported to the Wurtzburg Society his discovery of a peculiar ray which cast strange accidental shadows of solid objects on a photographic plate. The ray passed through the soft parts of the hand, for example, but revealed the denser bones within. He modestly called the new light an x-ray. Kölliker, appreciating the diagnostic possibilities of the new medium, suggested that it be named for the discoverer. Although Roentgen was thus honored, the subsequent story of his life is one of the sad tragedies in the history of medicine. Garrison tells the episode in a few brief words:

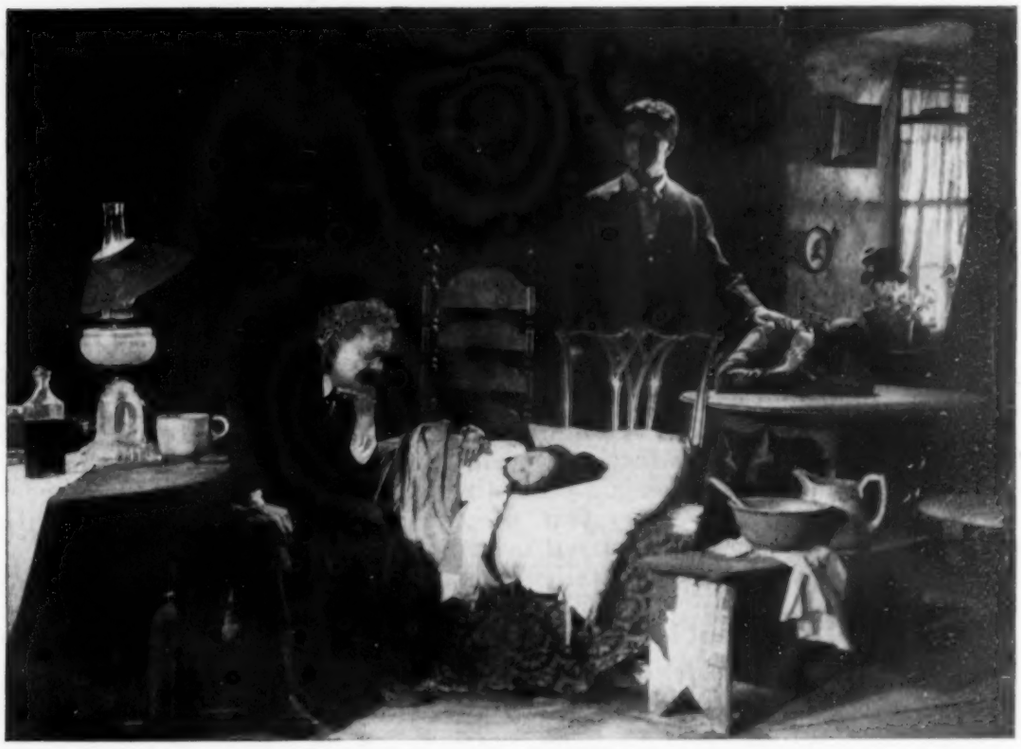
> In spite of the award of the Nobel Prize—1901—and the worldwide fame that was his, Roentgen, a simple, honest, truth-loving nature, began to hate publicity when his discovery was imputed to his assistant. Wounded by vituperation, he sank more and more into himself and was accessible only to students and to visitors of character, breeding and ability. Saddened by the war, the outcome of which he predicted, he retired from his chair, and, wife and friends gone, he died on February 10, 1922, a lonely, isolated man, neglected by the younger generation.

His discovery lives on and has been developed until its usefulness now far exceeds the wildest dreams of the pioneers in the field.

The roentgen ray was at first used to visualize bones and foreign bodies. Now the heart and lungs have been made to reveal their pathologic secrets; and through the use of chemicals and opaque mediums, practically all the viscera may be explored. Ulcers in any part of the digestive tract are readily visualized; gallstones or a diseased gallbladder are demonstrated with remarkable certainty. Difficulty is sometimes experienced in impressing the limitations of the x-rays on the uninitiated layman. Not infrequently a patient will go to the laboratory of a roentgenologist with the request that he be "x-rayed all over." The honest physician will explain that the x-ray examination is but a small part of a broad and comprehensive diagnostic plan and that the roentgenologic interpretation must in every instance be correlated with clinical symptoms and physical signs. It is a medium to be used but not abused.

Each new development in our complicated modern civilization has made fresh demands on the ingenuity of the medical profession, and in practically every instance the medical inventor has been equal to the occasion. Half a century or more ago the establishment of extensive railroad systems required accurate tests for color blindness to make safe the rapid and efficient handling of the giant steam engines on a complex and intricate web of steel. Today the rapid development of air travel has made efficient tests necessary to determine whether or not air-minded men can be safely made into air pilots. Again the demand has been met, and in the Bárány chair the potential aviator can be twisted and turned, rocked and tilted so that every sensation of the plane in motion can be imitated while the candidate is safely seated on terra firma, yet his sense of equilibrium can be accurately and positively gaged.

One might enumerate, ad infinitum, the medical devices that have been constructed to aid the physician in his diagnosis; yet they are but a means to an end. In the preface to his book on "Heart Records," J. Calvin Smith naively remarks that "the possession of an electrocardiograph does not make a cardiologist." In peace as in war, it is the man behind the gun. "Clinical sense," an intelligent appreciation of the constitutional and psychic factors in disease, a sympathetic understanding of the patient as an individual rather than as a "case," is the determining factor in the making of a good "doctor."



He was a praying doctor of a school now almost extinct; but he was also a fighting doctor. (A replica of Sir Luke Fildes' painting "The Doctor," reproduced from a still of DeMille's picture "The Country Doctor.")

ARE DOCTORS PEOPLE?

By Sara Haardt

THE DOCTOR who attended my mother when I was born literally breathed the breath of life into me, so it is no wonder I believe in doctors. I was what they call a blue baby—born dead, according to my nurse—and I failed to catch my breath after the usual spanking and even after the doctor had taken me by my heels and whirled me like a pinwheel through the air. Swiftly, then, he opened my mouth and breathed into it until normal respiration started with a howl.

That doctor was Richard Frazer Michel who was the first surgeon to enlist in the Confederate Army and who went to Fort Sumter with Beauregard on the first whisper of war. During my childhood he called regularly at my house in Montgomery, Ala., and thrust under my tongue his huge, old-fashioned clinical thermometer, which had been captured from the Yankees. He was an old man then and the senior warden of St. John's Episcopal Church, where I went to Sunday school. The third time he saved me from dying (the second time was from smallpox!) he himself routed out the rector of St. John's, had all the candles on the altar lighted, and sat with bowed head while the prayers for the sick and dying were read.

"Daughter," he had told my distraught mother when he left her, "I have done all I can. The rest lies with the Great Physician, and I can only pray to Him."

Pray he did, but he also returned and sat up with me all night, battling with every weapon that was then in use against typhoid. That I came through at last I lay to his skill and vigilance. He was a praying doctor of a school now almost extinct, and perhaps his God did look down from the clouds and aid him; but he was also a fighting doctor who did everything that was humanly possible before the candles on the altar sent up their glow.

He has been dead now these twenty-six years, and I have been in the care of many other doctors as I have run the gamut of tuberculosis with two very unpleasant complications, pleurisy, a broken arm, a tonsillectomy, sinusitis, measles, mumps, a major internal operation, and all the minor ills that human flesh is heir to. But what I got from him, the warm comfortable feeling I always had that he was fighting for me, I have got also from every other physician who has followed him in my somewhat complicated clinical career.

I have observed, further, from the women with whom I have talked in doctors' offices and in hospitals, that I am not alone in my experience. Doctors are never too busy to listen to the miseries that beset the body and deflect on the soul. They are at once sympathetic and happily

impersonal, thus reducing the embarrassment that goes with confession. They do not believe that suffering is good for the soul, or that it was so ordained. Indeed, most of them seem to believe that the quickest way to relieve a pain is much too slow.

A few weeks ago, after a mild attack of influenza, I visited my present physician for an examination of my lungs. I was, like most extuberculous patients, somewhat worried, fearing that the old infection might light up.

"We'd better get a picture of your lungs," my doctor told me. "That's the quickest way of putting your mind at ease."

I was waiting in his office, examining his vast collection of paper-weights in an effort to conceal my fear, when his colleague came in with the dripping negative. The two of them adjusted it in a frame and snapped on a light behind it. There was a deafening silence as they studied the picture closely. I could see that it was clear; but I dared not look at it, for its very clarity might reveal some trouble.

Then my doctor spoke in his soft manner with a shrug of his slender shoulders; he was not unlike Dr. Michel in physique, I recalled sharply.

"They're perfect," he said. "Not a blemish or a scar. It's really quite remarkable. I can't even see where you had the pleurisy in that right lung, although I remember the extent of the area well."

I laughed, and went on my way reassured. His report was infinitely consoling. I know very well that if he had rushed out to pray for me like good Dr. Michel I would have been horribly frightened. Although the memory of Dr. Michel is dear to me, I would rather my present doctor rushed to his laboratory instead. Perhaps the same God presides over both. There are, indeed, theologians who maintain that He does, but my present feeling is that a doctor's talents and industry are more important to me in illness than is his faith.

I like to be treated as an intelligent adult when I am ill, not as a deranged unfortunate or as a little child seeking guidance through the wilderness. Most doctors, within the range of my experience, do appeal to the intelligence. They would rather talk to a patient frankly about his condition than to keep back anything he should know. Half the battle in a serious illness is being able to talk it over sensibly with an impersonal, collected person who is capable of answering questions with respect to one's intelligence as well as one's feelings. The women of today want to be treated as grown-ups, even when what their doctor has to say is bad news.

Recently I read how Carolyn Wells went to several doctors for consultation about some trouble she was having with her heart. Did she have hysterics or swoon in the Victorian manner when they told her she had only a few years to live? Far from it. Instead she wrote an article about her trouble and got it off her chest, and in the article she said she was thankful for the time allowed her to straighten out her affairs.

In the whirligig years since the Victorian era, American women have begun to realize that there are many unpleasant facts from which they cannot be shielded, even by the most vigilant families. Moreover, they begin to question the rights of others, whether relatives or not, to assume responsibilities for them. For a time, after they began to feel that way, they swarmed in droves to the psychoanalysts; here seemed a perfect outlet for their bottled-up emotions. But soon, I believe, they resented the doctrine that their aches and agonies were imaginary; and now, when they are ill and out of sorts, they go to the regular doctors.

These regular doctors are realists like themselves; and realists, in the end, are more comforting than idealists, for in the face of inalterable facts they retain the courage of their convictions. The change, in truth, is really a sort of return to Victorianism. The Victorian ladies, like the good actresses they were, may have seemed to lean on idealists and to be idealists themselves, but actually they were the most hard-boiled realists this side of Eden. To see them in their true colors, one need only remember that their very livelihood depended on their ability to marry eligible husbands. They were obliged to take stock of their charms, their rivals, the whole of their rose colored world, with an eye that cut straight through all pretense and politeness.

Is it any wonder, then, that Victorian ladies, on occasion, swooned with the vapors and called in the family doctor to ease the mysterious pains that caught at their hearts? The etiquette of the time did not allow them to empty their hearts to their physicians as I have seen modern women do; but in the presence of the old family doctor there was the comforting feeling that deep down underneath the hollow heroics of the time, he understood their miseries and knew distinctly what caused them.

Women today have fewer pains in their hearts but equally as many in their heads, and they depend on their physicians to cure them of worse things than the vapors. I do not believe that many of them are shaken by reports such as that made by the Committee on the Costs of Medical Care, with its disquieting hints that seeing doctors has now become overexpensive. Paying doctors' bills after one has recovered from an illness may seem like paying for a dead horse, but those bills in the main, even those of some of the best specialists, are really moderate. The Committee itself says the average income of the American doctor is only $5,300 a year, and this figure includes the specialists.

I have lived in Baltimore, a great medical center, for seventeen years, and during that time I have had to consult many physicians and specialists of one kind and another, but I have received only the most modest bills. Aside from the fact that these bills more than once represented the saving of my life, which, sentimentally or no, I would hesitate to put a price on, they included statements for two major operations, calls at all times of the day and night, hours of the most meticulous work in the laboratory, and every other sort of aid.

Such statements also take into consideration something else which many patients conveniently forget, once they are well again: the training required of a physician includes four years of college, four years in medical school and a year or more of internship, years of study far beyond those required of the men of any other profession. During his internship the young doctor receives, at most, $30 a month; most interns receive absolutely nothing. Then follow, commonly, years of practice in which a $2 fee is the most the physician asks, and he is lucky if he collects that.

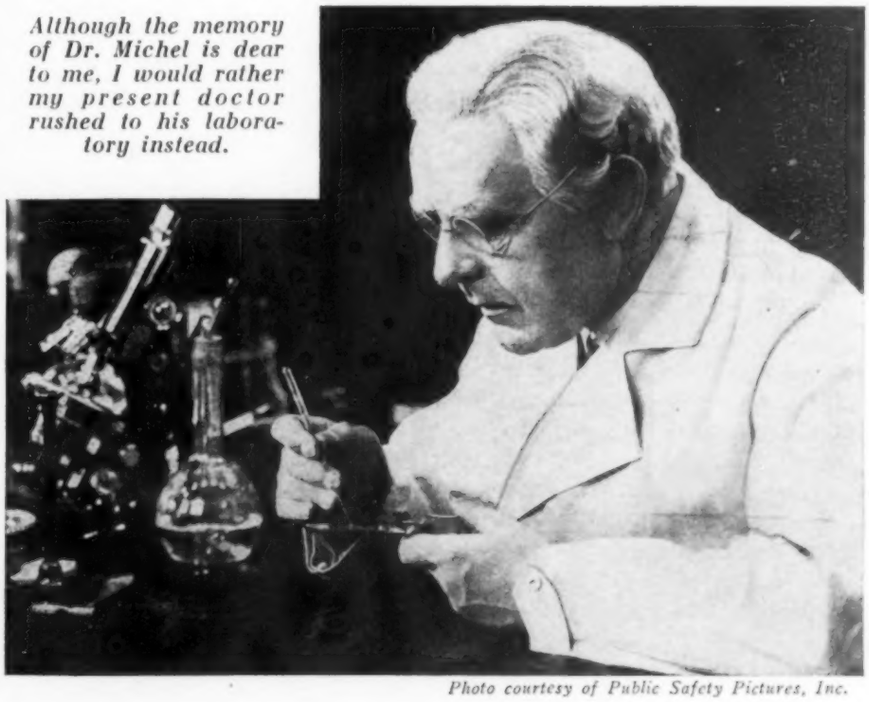
If anything is universally known about doctors, it is the fact that they are seldom paid promptly and often not at all. In addition, they not only do a large amount of charity and courtesy work, but they are constantly called on, as good members of the community, to contribute their hard-earned cash to every cause that comes along. If the names of the doctors in any list of contributors to charity drives or what-not were counted, it would be discovered that they far outnumber those in the other professions, and furthermore, contribute more generously, in proportion to their incomes, than business men. At frequent intervals during the depression, I have seen public notices of doctors who canceled all the old bills due them and of others who extended the credit of their patients indefinitely. But I have not heard of any other group of men, professional or otherwise, thus foregoing their earnings or even a part of their earnings. One third of the physicians in the United States in 1929, a good year, had incomes of $2,500 or less. Since I owe my life to medical men, I may not be what the historians call an unbiased critic of the report of the Committee on Medical Costs or of the onslaught on the doctors that followed it, but I cannot resist raising my voice against the committee when it makes such a sweeping statement as the following:

> Delay can no longer be tolerated. The death rates from cancer, diabetes, and appendicitis are rising threateningly. . . . Every year tuberculosis kills its thousands and costs the country more than half a billion dollars. . . . A great army of rheumatics remains untreated without hope of alleviation or cure. Many diabetics still remain without insulin or receive it too late. Human life in the United States is being wasted, as recklessly, as surely, in times of peace as in times of war. Thousands of people are sick and dying daily in this country because the knowledge and facilities that we have are inadequately applied.

Well, I happen to be one of those who have been cured of tuberculosis by doctors, and I happen to know that the national death rate in tuberculosis for each 100,000 persons in the United States was 201 in 1904; 94 in 1923; 68.4 in 1931, and only 63 in 1932, the latest report to date.

I simply cannot become indignant about the delay of doctors in "promptly putting their knowledge and facilities to work." What their critics have lost sight of is that they are not magicians but human beings like the rest of us. There are undoubtedly incompetent men among them as there are incompetent members in any group; but taking them as they run, in the small towns as well as in the large cities, they are about as capable, faithful and useful a group as can be found.

I cannot help recalling at this eleventh hour, not as a defense of doctors but as a commentary on the rest of us, the noticeable fact that those who declaim most loudly about the doctor's faults and bills are often the first to call him when they feel the suspicion of a pain. This, I have been given to understand, is only human nature; but so, if I may be so bold as to judge, is the doctor's immediate and sympathetic response to such calls.



Although the memory of Dr. Michel is dear to me, I would rather my present doctor rushed to his laboratory instead.

Photo courtesy of Public Safety Pictures, Inc.

The Doctor's Ethics

By
PARK J. WHITE

Tearfully, he is told by the family to "spare no expense."

OUR PATIENTS seldom have anything kind to say about medical ethics, or "medical etiquette," as they so often call it. To them, ethics would seem to mean a fraternal conspiracy to dissemble and cloak our manifold sins and wickedness and to thwart patients in their divine right to hire and to fire doctors as they please. Judging us as they must, by the standards of the market-place, they are mystified by the tender care with which doctors avoid speaking ill of each other, by our reluctance or refusal on occasions to accept each other's patients for treatment, by our aversion to advertising and, in short, by our ethics.

The Greatest Medical Virtue Is Honesty

If we of the medical profession are true scientists, we must agree that we know in part, and we prophesy in part; that even when we look through a microscope, we see through a glass darkly. And how often the cold light of pure science, turned as it is on the processes of life and death, flickers and grows dim! The leaders of the medical profession have learned that the greatest medical virtue is honesty. And honesty, like love, suffereth long and is kind.

Not a few laymen seem to think that it is they who suffer long, while the doctors are being kind. The lethargy of the profession in assisting these laymen to distinguish medical gems from paste has provoked much just criticism from persons who deserve to be heard.

As it is, they trust their more or less valuable selves to physicians and to surgeons as blithely as they do to airplane pilots. In both instances, lack of training and conscientiousness may result in what is so cheerily referred to as a "crack-up."

"Worth Makes the Man"

Often, even "results" may prove to be an unreliable criterion by which to judge a physician's worth. For example, "He certainly brought John out of pneumonia beautifully." Does this imply a recovery that masquerades as a cure? Or, "Ella was threatened with typhoid, and he never let her get it." Or, reversely, "Keep away from that butcher," referring perhaps to a surgeon whose work has been faultless but whose bill the critic intends to ignore.

We do undoubtedly, as should any humble seekers after truth, take seriously the admonition, "He that is without sin among you, let him first cast a stone." True, "the best of us" will be more likely to count sponges and to have them counted than to sew one up in a trusting patient's abdomen. The best of us make mistakes and therefore suggest consultations with

colleagues rather than make final, vital decisions alone.

We doctors are right in concentrating on the exclusion at the start of those whose training and personal habits make errors in diagnosis and treatment liable to be the rule. Any physician who will not aid the profession and the public in getting rid of such persons is *particeps criminis* and should be unto us all as a heathen man and a publican.

How Far Do the Patient's Rights Extend?

Of the many things which make patients want to "Kill the physician and the fee bestow upon the foul disease," none is more likely to do so than restriction, for ethical reasons, of the patient's freedom to choose any doctor at any time. The booklet "Principles of Medical Ethics," published by the American Medical Association, is specific on this point. It contains the following stipulation:

> A physician should never take charge of or prescribe for a patient who is under the care of another physician, except in an emergency, until after the other physician has relinquished the case, or has been properly dismissed.

The proper dismissal of a doctor is an embarrassing ordeal which the majority of patients elect to avoid and about which the same majority may be expected to stretch the truth beyond recognition. Reasons for dismissal may include the real incompetence that I have been discussing; the reason may also be that auto-induced antagonism which accompanies congenital unwillingness to pay doctors' bills, the doctor's failure to register excitement over the baby's heat rash, his registering excitement over the baby's heat rash, his undue willingness to remove tonsils, his undue reluctance to remove tonsils and so *ad infinitum*.

Happily, there is now an increasing inclination on the part of medical men to concede the patients' right to call in whom they wish.

The present-day tendency of doctors to educate patients and to take them into their confidence is having a healthy effect on what has long been held in awe and suspicion; namely, the consultation. Considering the pompous secrecy with which medical men used to discuss a case behind closed doors with only ponderous polysyllabic words reaching the ears of the anxious family, how could ordinary mortals help assuming that such a procedure was adopted so that all the doctors might tell the same story?

If the patient is an infant, or unconscious, or both deaf and blind, the doctors may properly consult about diagnosis, prognosis and treatment in his presence. But if he is able to comprehend their words or facial expressions, naturally any discussions should take place at a safe distance. No one is helped by being permitted to hear such remarks as, "Yes, it might be malignant, but how are you going to tell until you get the pathologic report?" Or, "Well, you may know more about it than I do, but I still think she has T. B."

It seems hard for some persons to understand that a doctor called in consultation should think not only of the patient, who obviously comes first, but also of the physician in charge. If the consultant owes his acquaintance with a patient to the doctor who trustingly called him in, it is clear that the former would be abusing his colleague's confidence if he should accept any invitation to "take over" such a case as his own. The matter is one of common decency rather than of abstruse ethics.

The doctor who takes the place of a fellow practitioner when the latter is sick or out of town may now and then find himself at a disadvantage. The patient and his family may be disappointed to the extent of irritation at their inability to obtain the services of the absent physician. The substitute physician is then likely to be watched by exceptionally critical eyes.

On the other hand, perhaps the absent physician has worried along for weeks without improving Baby Brown's colic, or Mrs. Jones's palpitation, and has left town when both these patients were on the point of improving. Dr. Smith "steps in," and, presto! both patients quiet down. Dr. Smith is promptly canonized, deified. Should he yield to the temptation to fall short of professional godliness, there is a fine chance for him to annex the medical affections of the Browns and the Joneses. Is it any wonder that the profession has no use for a man giving such an account of his stewardship? Common decency, again!

In general, then, the patient's right to be treated by whatever physician or surgeon he may choose should be conceded. Indeed, if he desires the services of any other doctor, any self respecting doctor should prefer to have his patient call the other physician. His hold on that family is weak. He can there do no mighty work because of their unbelief. Nor can his standing be improved by another doctor's "ethical" attempt at coercion.

Where Do the Physician's Rights Terminate?

My attitude regarding euthanasia was entirely changed by one of the two lectures on ethics which the late Dr. Abraham Jacobi gave to my class at medical school. He merely reminded us of what we already knew; namely, that we know very little and that, knowing so little, it is scarcely right for us to take unto ourselves the prerogative of denying life to any human being, however wretchedly inadequate his mental or physical equipment may be. A little reflection should convince one that a number of conditions formerly regarded as hopeless have latterly been found remediable.

Out of the depths the young doctor cries, "How long, O Lord, how long?"

Parents of normal children are prone to say with all finality, "Well, if I had a completely deformed child or an idiot, I should not want to see him live on." Almost invariably, however, nature, such a bungler from the idiot's point of view, endows the parents with the ability to see intelligence in every aimless movement, recognition in every vacant grin. Here, to the *n*th degree, is the pathos of self delusion, hope springing eternal in the human breast. Here is yet another argument against "letting the baby die," but not, however, against putting him in an institution where he will not be able to retard the normal development of an entire family.

The ethics of sterilizing utterly defective and degenerate persons, to prevent their having children who would surely become burdens to the community, would seem to be beyond dispute. Checking the reproduction of a degenerate line should rank as a real community service. In fact, many states have laws permitting the sterilization of criminals and degenerates whose reproduction would menace society.

What Is the Value of a Life?

Medicine is still a profession, not a trade. One of the greatest obstacles to maintaining its high ethical level is that indispensable annoyance called money. The actual cash value of medical service cannot be fixed. A life is saved by an operation or by a series of blood transfusions. What is it worth? Everything.

Medical men send many bills based on the principle, "the harder the work, the less the pay." The patient who is seriously or dangerously sick for a long time needs special nurses, consultations and expensive laboratory work in addition to anxious hours of work on the part of the doctor himself. Tearfully, he is told by the family to "spare no expense," a remark almost certain to be followed later by equally tearful requests to spare expense. If the doctor ultimately receives one fourth of the total amount spent on such an illness, he may consider himself fortunate. Few persons realize how large a proportion of the best doctors' time is spent in work for which no pay whatever is given, work which involves no reduction of nerve-wracking responsibility. Bear in mind, also, it is the much despised "professional ethics" on which communities lean so heavily in getting free treatment for their indigent sick.

Unethical Practices Are Severely Condemned

One of the worst forms of commercialism in medical practice is known as "fee splitting." It is unanimously condemned as unethical. At first glance it might seem as though one doctor's division of a fee with another were no more reprehensible than a realtor's division of his commission.

It is well known that groups of physicians sometimes pool their fees and divide the proceeds on a percentage basis, but this is done with the full knowledge and consent of the patient. Fee splitting *per se* is the *secret* division of fees with a practitioner for the purpose of inducing him to send patients. It is usually a specialist in the city who thus gets internists or general practitioners to refer patients to him instead of to other men in his specialty who are at least as competent. This undercover system is unfair not only to his colleagues who are not parties to the contract but also to the patient. If the latter asks his family physician to send him to the man who in his opinion is best fitted to treat the condition and if the family physician knows of a specialist in that "line" who will send him a share of the fee, it is easy to see which specialist will be given the highest recommendation. Is it any wonder that such a practice is ruthlessly condemned and punished?

Before leaving medical finance for more pleasant topics of discussion, it would be well to mention those who are universally acknowledged to be entitled to free treatment from physicians and surgeons. First, of course, come doctors and their dependents. The American Medical Association's booklet "Principles of Medical Ethics" correctly states:

> Experience teaches that it is unwise for a physician to treat members of his own family or himself. Consequently, a physician should always cheerfully and gratuitously respond with his professional services to the call of any physician practicing in his vicinity, or of the immediate family dependents of physicians.

This is obviously an excellent principle. Any medical man who thinks he can trust his own judgment in the diagnosis and treatment of those whom he loves, especially if the condition is at all serious, is sure at some time to find himself sadly mistaken. The doctor called by a colleague to treat a member of his family is, and should be, altogether pleased to be so called.

Finally, medical students, nurses, medical social workers, and, by custom, all varieties of the clergy, with those directly dependent on them, complete the list of those who are treated by physicians without charge.

The Doctor's Ethics Forbid Advertising

It is painfully evident that medical students approach the early years of practice with no little trepidation. Under his "shingle," the young practitioner is tempted to hang Dr. Holmes's famous line, "Small Fevers Gratefully Received." But according to the doctor's ethics, he must not advertise. If only the suffering public, in the curing of whose ills he has been so thoroughly trained, could be informed of the excellence of his education and hospital experience! But to inform them would be "unprofessional." Besides, the public is not interested.

He sees laymen, with cheerful unconcern for their own welfare, troop to the offices of doctors whose salesmanship is superb but whose methods are as out-of-date as they are impressive. He sees chiropractors, osteopaths and prescribing druggists doing a business of no mean proportions, and that not always among the ignorant. Out of the depths he cries, "How long, O Lord, how long?"

His friend, a business man, inquires, "Why don't you 'regular docs' advertise, anyway? Every one else does."

Obviously, the answer to this well meant question is that the doctor has skill and not wares to sell. The most ardent advertiser would have to admit that "ads" such as the following could hardly be considered proper:

"My Bedside Manner is Unsurpassed."

"Gallbladders Aseptically Removed."

"Bring Me Your Baby and Watch Him Gain."

No, such advertising will not do. Yet unquestionably there are times when good medical salesmanship may determine whether a patient is to live or die. What is the use of knowing that Jones's appendix should be removed, or that the Brown baby's mastoid should be opened, if neither Jones nor the Brown family can be convinced?

Let the young doctor remember how easy it is to identify the back-slapping, "joining" type of medico, who is out solely for the purpose of filling his waiting-room! Let him apply himself to his various tasks with "modest stillness and humility," and the automotive power of medical gossip is likely to come to his rescue. Older, influential medical men will begin to take knowledge of him, especially if he is blessed with an engaging personality. Having been found faithful over a few things, he is in a fair way to enter into the joy of the lords of the profession.

The physician who would understand his patients as well as their diseases is well equipped, indeed, if his previous training has brought him the habit of considering others, of putting himself in the other fellow's place. The trouble is that consideration for others takes time as well as real effort. The man who gives of himself with his prescriptions is far more exhausted at the end of a day than is his colleague who can

> . . . skip upstairs, inquire, inspect, and touch,
> Prescribe, take leave, and off to twenty such.

Nowadays, there is so much more actual medical work to be done! There is so much less excuse for a diagnostic or therapeutic slip! All this means the careful keeping of records, the making of copious notes, and concentration on details. But we must not overlook the fact that careful and cumbered as we are about much science, kindly interest in our patients cannot be delegated to others.

Now, more than ever before, the public, that jealous god, is calling on its tradesmen and professional men to give an account of their stewardship. The public would search us and know our hearts, try us and know our thoughts; it would see if there be any wicked way in us. How do these ethical motives of ours withstand scrutiny?

Paradoxes and inconsistencies appear, as they do in all things human. Our kindliness to each other is noble enough, but at times it makes it difficult for others to appraise us; as an organization, we are far more conservative than as individuals. We often bungle our difficult, if not impossible, task of associating cold science, cold cash and warm sympathy.

Consider First the Patient and His Welfare

We would not cry, *tu quoque!* But we can think of no other group that has tried with any greater honesty to practice its precepts. It has been our lot to "strive and hold cheap the strain"; to accept years of apprenticeship, absorbing, but demanding ascetic devotion; to deal night and day with baffling, incomprehensible persons and diseases; to find our fellows so engrossed with their pain and misery that gratitude for any help occurs to but a few rare souls. Through it all, our ethics has consisted and must always consist, of one great principle: Consider first the patient and his welfare. We can do no more and must do no less.

SNOBS and SOBS

By
Muriel De Mille Alden

"Holy cherubs!" he exploded when he found his voice. "What on earth do you want a job like that for?"

A STOCKY young man of dark complexion came out of the country club. He nodded rather grudgingly to one of the two elderly gentlemen sitting on the porch and walked quickly toward the golf course.

"That was Cortland Manning," explained Dr. Purdee to his friend. Then after a pause, "Yes, sir, glands surely played the deuce with that chap's romance. Glands—and prospects." He spoke with conviction, running long fingers through his iron gray hair. He was the gland specialist at the Back Bay Clinic.

His companion, Professor McKye, was a small, wiry man, with gray whiskers trimmed to a point. He cared nothing about glands, but he was greatly interested in love's young nightmares.

"What's the story?" he asked enthusiastically, and his blue eyes twinkled.

"When Cortland began studying law," said Dr. Purdee, "he was engaged to my niece. She used to live with us. Charlotte was a plump little woman, smart as they come, and as pretty as a picture. She was private secretary to the

president of a South Boston bank." The speaker crossed his long legs and settled back to finish his story in comfort.

"Cortland had an uncle in Pittsburgh. He was the youngest brother of Cortland's mother and only about ten years older than Cortland. This uncle was a very quiet person, walled in by cold, aristocratic dignity, but he was nice enough when you got inside the wall. He was a great tennis player and a confirmed bachelor. He made a lot of money in steel and had set aside $100,000 to be paid to Cortland on his thirtieth birthday, if he stuck to the law business and made a success of it. So with a fortune in prospect, naturally Cortland was pretty anxious to please Uncle Neil. He wrote to consult him about Charlotte, and the engagement was pronounced satisfactory. Cortland was 21 then. It would be two years before he finished his law study, so the wedding had to wait. I wasn't very keen about the match, but I didn't say so. They were both of that same thick-set type, which meant that their gland structure was similar. And similar types never get along well together. They usually end in the divorce court."

Professor McKye stroked his whiskers impatiently.

"Never mind the gland part of it," he urged.

"Well," continued Dr. Purdee, "the bank failed, and Charlotte was jobless. That was April, a year ago. She looked for other positions, but there weren't any vacancies anywhere. Then she heard of a chance up in Maine. It wasn't the kind of work she wanted, but it was better than nothing. So she applied for it; but she didn't say anything to Cortland until her application was accepted. It just happened that he came to our house the evening after she received the letter of acceptance. I was reading on the other side of the room, but they didn't pay any attention to me.

"'I have a job for the summer,' Charlotte said in a tone of proud excitement, for jobs were something to brag about.

"'A job? Doing what?' asked Cortland.

"'Waiting on table in Ocean House,' she told him. 'Up at Rocky Beach in Maine.'

"Right then the fireworks started. People of that type of gland structure just fly right off the handle and get mad when anything bothers. Cortland was simply thunderstruck.

"'Holy cherubs!' he exploded when he found his voice. 'What on earth do you want a job like that for?'

"'For money,' she answered. 'The wages are generous. It is a very exclusive resort. The work is easy, too, so I'll get a fine seaside vacation into the bargain.' And her face got all rosy at the pleasant outlook.

"'But waiting on table! Why, that's a servant's job,' he sputtered in an angry voice. Glands, you see. That short, stocky type—"

"Go on with the story," pleaded Professor McKye, fidgeting.

"Well, Charlotte's face got redder and redder, and her eyes flashed dangerously. 'Servant, nothing!' she said, quite snappishly. 'They hire only college graduates.'

"'It's a servant's job, I tell you,' snarled Cortland. 'Explain it any way you please. Say, Charlotte, you shall not do it. You've got to consider me. Expect me to marry a waitress? Why, Uncle Neil would disown me. He'd consider it a family disgrace, and that hundred thousand would go to charity.'

"Charlotte looked at him a moment in silence. Then she said scathingly, 'I believe you'd sell your soul for your uncle's money. Why don't you stand on your own feet?'

"He ignored her jibe. 'And look at my side of it,' he begged. 'In a short time I'll be a lawyer. See how it would hurt my future if my wife used to be a servant—a mere hash slinger.'

"Charlotte stared at him. 'Huh! Well, just see how it would hurt my future if I married into a family of snobs!'

"Cortland sprang up excitedly. 'We're not snobs,' he argued. 'But a man has to live up to his family traditions. Uncle Neil would have a fit. He'd never acknowledge the marriage.'

"Charlotte's eyes just blazed. 'Well, he won't have to,' she exclaimed. And snatching off her engagement ring, she threw it onto the table. 'I need the cash this summer, and I'm going to Ocean House to earn it.' Then she flounced out of the room with her chin in the air. Cortland banged out of the house, jumped into his roadster and took the first corner on two wheels. Mad as a hornet. Glands, you see."

"Glands, bunk!" exclaimed the Professor. "Just a lovers' quarrel. They'll patch it up and live happily ever after. See if they don't."

Dr. Purdee ignored the interruption.

"Well, Charlotte cried a little about it for a few days. But she stuck to her point and went to Ocean House. It is a very expensive resort. Rich people go there from all over the country. One of the guests last summer was a homely, youngish man, who put in two hours hiking and swimming every morning before breakfast. He happened to sit at Charlotte's table in the dining room. The upshot of the whole thing was that they fell in love. Right now they're in Switzerland on the honeymoon."

Dr. Purdee looked at his watch and stood up. It was time for him to go back to the clinic.

"It ought to be an ideal match," he continued. "The man is the athletic type, neither thick nor thin, just average. His gland structure—"

"Say!" thundered Professor McKye. "If you mention glands again, I'll be guilty of justifiable homicide. Who was the millionaire who married the hash slinger?"

Dr. Purdee chuckled. "It was Uncle Neil."

The Greatest Team on Earth:

NO ONE will argue the fact that many of the greatest contributions to public welfare through the ages have been made by the medical profession. Through unheralded sacrifices that know no parallel, members of this profession have been in the past and are at this moment unraveling the mysteries of disease so that life may be prolonged for additional years in strong, healthy bodies.

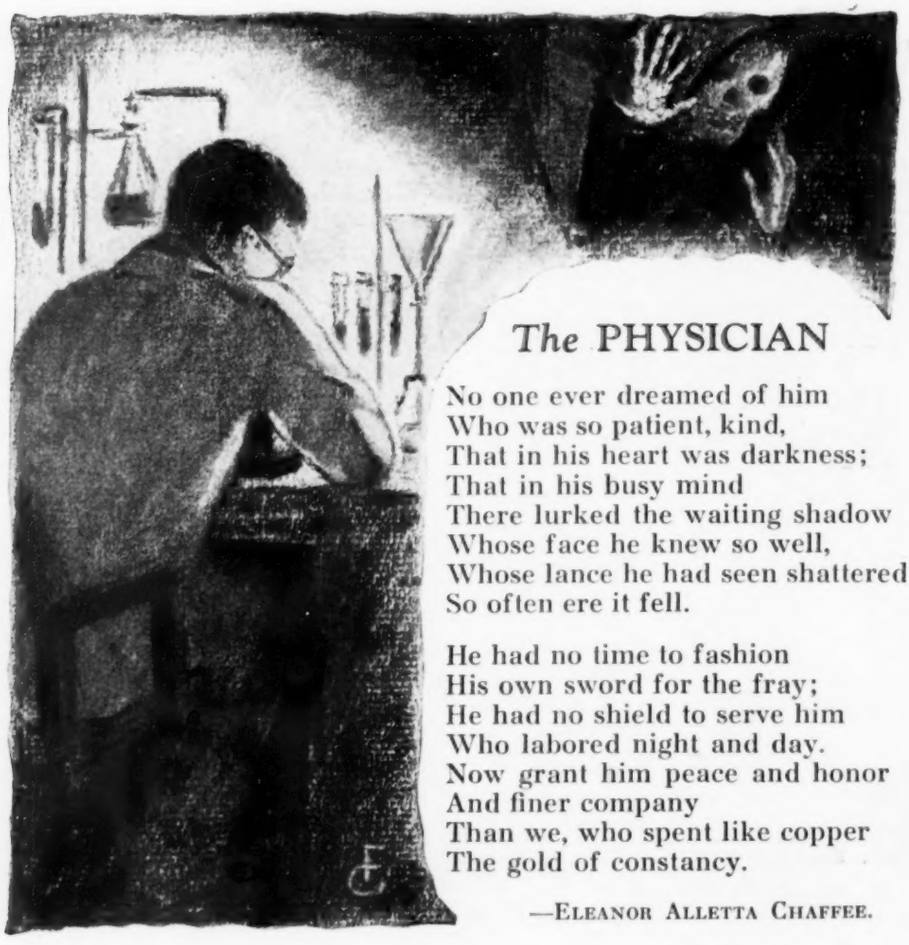
Two decades ago the average span of life was 35 years. Today it has been lengthened to 60 years. This is not a miracle. It is due to a greater understanding of the human body and a wider application of that knowledge. Important factors in the spreading of the knowledge are those two closely allied and firmly interwoven branches of the medical profession, the general practitioner and the specialist.

Every student who graduates from a medical college is required to be a physician who is trained in every branch of medicine, surgery and obstetrics. There is not a single part of the body from the scalp to the toes that has not been studied from the standpoint of anatomy, physiology, and disease. There is barely a surgical procedure of importance that he has not witnessed and assisted. The technic of handling difficult obstetric cases has been demonstrated to him innumerable times. He is equally competent to care for the infant in the cradle and the aged person in the invalid's chair. Years of intensive study and contact with hundreds of patients in hospitals and clinics constitute the foundation of learning of the family doctor today.

Many physicians find such appeal in the diversity of a general practice that they do not care to favor any one of the many phases of medicine. They find it more gratifying, for example, to perform some minor operation in the morning, treat a serious case of influenza in the afternoon and assist the stork at night, so to speak, than to confine themselves to a specialty.

Not every doctor, however, cares sufficiently for every branch of medicine to be equally efficient in them all. Some physicians dislike the treatment of diseases of women; others abhor manipulations about the eye, and some do not care to perform surgery no matter how minor the case may be. Not that the general practitioner is necessarily incapable of handling such cases, but many find themselves magnetically attracted to some certain specialties because of natural inclinations in those particular fields.

Those physicians find a preferential interest in certain parts of the body and the diseases to which those parts fall heir. For instance, one may become fascinated by the structure of the skin. It is an organ fully as important to the well being of the individual as the liver or kidneys. There are hundreds of diseases limited to the skin, and the problems which arise in their treatment become overwhelming. It is beyond the realm of possibility for the average physician to study each of these in detail. If he is sufficiently interested to make a scientific study of the skin, he must of necessity spend considerable time with books



The PHYSICIAN

No one ever dreamed of him
Who was so patient, kind,
That in his heart was darkness;
That in his busy mind
There lurked the waiting shadow
Whose face he knew so well,
Whose lance he had seen shattered
So often ere it fell.

He had no time to fashion
His own sword for the fray;
He had no shield to serve him
Who labored night and day.
Now grant him peace and honor
And finer company
Than we, who spent like copper
The gold of constancy.

—ELEANOR ALLETTA CHAFFEE.

The Family Physician and the Specialist

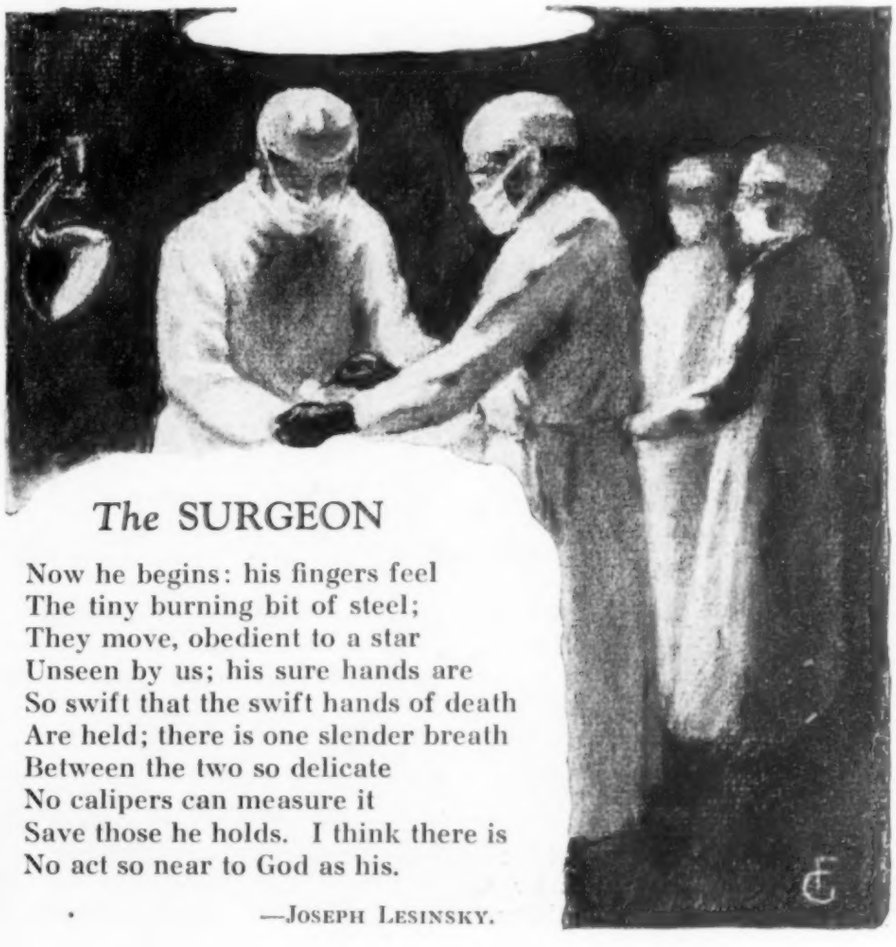
By HERBERT L. HERSCHENSOHN

and in clinics devoted exclusively to that specialty. He cannot at the same time be concerned with every possible disease that might affect the eyes or the brain or other organs in the body. In other words, he has become a specialist, a man who, after getting a bird's-eye view of every field of medicine, has decided to make a landing on that field which happens to be most appealing to him. Because he is a specialist, because his knowledge of that particular subject is greater than that of the general practitioner, it is he to whom baffling cases are referred for diagnosis and treatment. As more and more cases are referred to him, his proficiency increases until he becomes a master of his chosen specialty. At no time, however, can he forget that survey of general medicine which has been instilled into his mind in the earlier years of his training and practice. His views are not side-tracked or distorted as if he were plunged headlong into that specialty without a previous journey through every channel of medicine. If he is enthusiastic about his specialty, he is rightfully so. His experience in that direction is greater than any one else's and is one that should be respected. The specialist can often observe and cure conditions that might ordinarily pass unrecognized and consequently be left untreated by one who is less skilled. Such neglect may be of an exceedingly serious nature.

The surgeon is without doubt the specialist who is most open to adverse criticism. His work is so dramatic, so definite, and its results are expected so promptly, that it is little wonder that his judgment and skill are fired on by bitter words when an operation is not successful.

In the minds of many persons there exists a most unfortunate trend of thought that a patient dies because of the operation; they do not realize that death may have occurred in spite of surgical attempts to save a life. Unjust criticism often comes from those who are inwardly seething with prejudice because of some unsuccessful operation in their own family. The bigoted stratum of the world is ever ready to condemn and reluctant to praise. Those persons can only be educated to appreciate medicine when the modesty that shrouds the medical profession today is shed and medicine's glistening accomplishments are revealed to the public. Members of the medical profession have nothing to be ashamed of in their calling and every reason in the world to be proud of it.

There is one dread that some persons have when they consult a surgeon. This is the fear that the surgeon has an "itch for the knife"; that is, that an operation or some radical procedure is positively going to be recommended in preference to conservative treatment. Nothing can be further from the truth. A great percentage of cases are turned away by surgeons as being nonoperative. However, it stands to reason that many conditions can be successfully treated only by surgery.



The SURGEON

Now he begins: his fingers feel
The tiny burning bit of steel;
They move, obedient to a star
Unseen by us; his sure hands are
So swift that the swift hands of death
Are held; there is one slender breath
Between the two so delicate
No calipers can measure it
Save those he holds. I think there is
No act so near to God as his.

—JOSEPH LESINSKY.

Let us suppose that a middle-aged woman consults her family doctor about an abdominal distress. He diagnoses the case as a tumor of one of the internal organs. Because the tumor cannot be seen, its nature, position and size can only be determined by the sense of touch. We shall assume that this physician has felt twenty other tumors of the abdomen the previous year. His experience is good but somewhat limited. To verify his diagnosis, he refers his patient to a specialist in abdominal surgery whom he knows has perhaps felt several hundred similar tumors within the year. Moreover, from past experience the surgeon at once knows what results may be expected if such a condition is left untreated and what degree of relief or expectancy of prolonged life may be anticipated if an operation is performed.

If the surgeon suggests that the patient should be operated on for the removal of the tumor, he may be accused of having an "itch for the knife." It is here that I rush to the defense of the specialist of recognized ability who has an "itch for the knife." Thousands of persons are alive today and in sound health because some surgeon with experience and foresight had an "itch for the knife." The "itch" that prompts one to remove a rotten apple spares a barrel of good ones. The "itch" that prompts the timely removal of a diseased organ spares the life of the patient.

Surgery has progressed to such an advanced stage of development that an operation is no longer deemed a serious risk unless, of course, the condition requiring the operation is in itself almost fatal. To make this clearer, I shall describe two typical and actual cases.

A young woman had a few mild attacks of appendicitis several months apart. Between the attacks she felt in perfect physical condition. She was strongly advised by a surgeon to have the appendix removed as soon as possible even though she had absolutely no pain at the time of examination. The patient asked why an operation was so necessary.

The surgeon explained: "The fact that you have had several previous attacks of appendicitis proves that your appendix is diseased. At any moment in the future you may have another attack. It may be your last one—if the appendix should rupture. A ruptured appendix means peritonitis, a condition which is so serious that the chance of recovery is slim, no matter how skilful the surgeon may be. If you were to be operated on now, there would be practically no risk at all."

The young woman pondered a moment and asked, "But isn't there some risk in being operated on even though I am in apparently perfect health right now?"

"Perhaps 1 in 500 might succumb as the direct result of the anesthetic or the shock of the operation; but if you would rather wait until the appendix ruptures, your chances are barely 5 to 1 of pulling through."

Further persuasion was unnecessary. That afternoon the young woman entered the hospital. The following morning the appendix was removed. The operation was simple, taking but twenty minutes. Recovery was rapid and uneventful. Ten days later the young lady walked out of the hospital with all worries about her appendix banished forever.

A young man of 20 had a similar condition and heard the same advice by the same surgeon. This youth was accompanied by his mother when he visited the surgeon's office. She was visibly perturbed at the suggestion of an operation.

"I should say not! You say that 1 in 500 might die from an operation like that. Suppose my boy is that one. He isn't sick now. If he gets another attack, I'll put some ice on his abdomen and he'll get over it; and if the pain becomes so severe that he can't stand it any longer, it will be time enough then for the operation. That's the trouble with all you surgeons. You can't see a patient without itching for a knife!"

Peritonitis meant little to her. It was a complication as unintelligible as a Chinese manuscript. Why should her boy get it? He was strong and husky. He had seldom been sick before. He was studious and had good habits. How could he possibly get such a thing as peritonitis?

The surgeon calmly resigned from further argumentation. It was useless.

Several weeks later in the dead of night the boy suddenly shrieked with pain and doubled up. A few minutes later he stiffened out as though his entire body were paralyzed. His abdomen was as rigid as a board. The pain was so excruciating that the slightest movement of his body was almost impossible. The doctor was called.

"The appendix has ruptured, and peritonitis has set in. It may be too late to do anything for him now. An immediate operation is his only chance. I'll call an ambulance."

An hour later the boy was under ether. The operation was far from simple. The intestines were glued together in a fiery red mass. The appendix was as thick as a thumb, reddish purple with a black ragged opening near the tip, the site of the rupture. Pus had burst through, and the peritoneum, that delicate tissue which lines the interior of the abdomen and covers the organs, had become inflamed. Like an active volcano, peritonitis was spreading its fire to surrounding areas. It was nearly an hour before the operation was completed. The boy's condition was most critical. Every conceivable means was utilized to subdue the ravages of this complication. It was all in vain. Peritonitis meant something very definite to the mother

now. She offered her blood for transfusion, but to no avail. The hair by which the boy's life hung snapped two weeks later. A life had been torn from this world that could easily have been spared if permission had been granted to let the "itch for the knife" materialize at the proper time.

These two cases are typical. They are repeated daily. The records of any hospital will show many similar cases. One case represents the enlightened part of the public that reposes its confidence in surgery and profits thereby; the other, the tragic case, illustrates the attitude of those who believe that the specialist has only an "itch for the knife" and who refuse to be operated on when advised but clamor in wild desperation for surgical assistance when it is too late.

Appendicitis was chosen merely as an example. Any other condition might as easily have been cited. For instance, many parents are at the present moment doing absolutely nothing about their children's diseased tonsils, refusing to have them removed because they believe that the doctors who recommend the operation are itching to use a knife. They refuse to believe that the pus from the tonsils is draining into the children's bodies, poisoning and permanently damaging their hearts and laying the foundation for rheumatism. The parents are blind to those facts but can readily see the surgeon's irresistible desire to use a knife.

True, mistakes are occasionally made. The human mind has not reached that stage of development called perfection. No one can deny the fact that at times an unnecessary operation is performed or that accidental death can occur as the result of such an operation.

When, however, one is confronted with bare statistics that to one unfortunate case there are thousands of successful operations performed daily, it is nothing short of ridiculous to ballyhoo the occasional tragic case at the expense of the entire realm of surgery. One might as well condemn aeronautics because a plane crashes every now and then. There is no logical basis for such reasoning.

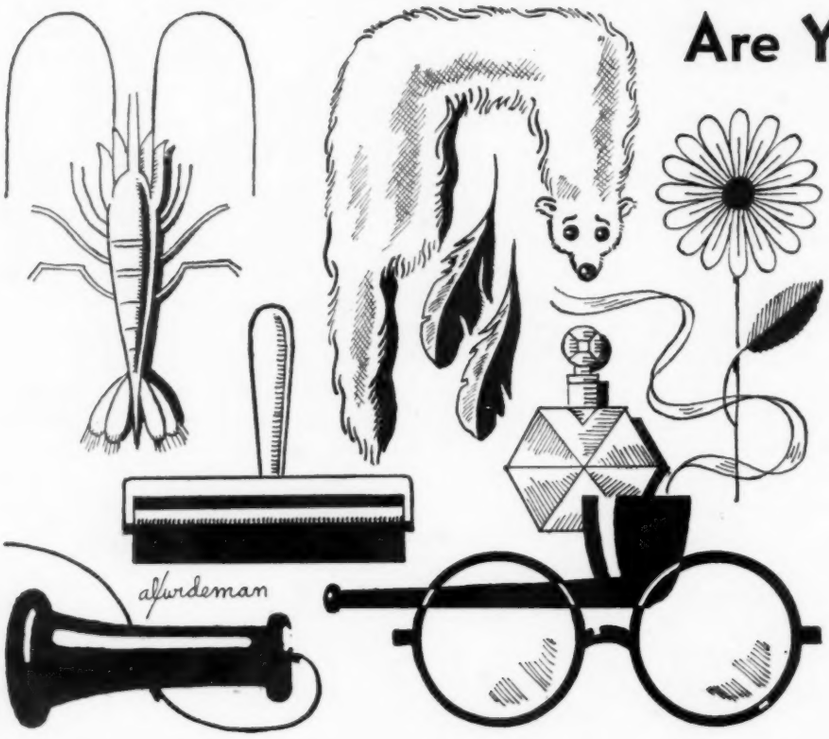
When a recognized specialist recommends certain treatment, there need be no fear in permitting such treatment to be instituted. By a recognized specialist is meant one who is recommended by the local county medical society or a grade A hospital. Inquiry by the patient at either the society or the hospital will at once determine whether or not the specialist is worthy of recognition. In this simple way one need not fall into the clutches of the quack "specialist" who usually treats a half dozen different conditions that do not have any relation to one another.

There is no dispute over the fact that the family physician should be consulted first when disease threatens, but certainly the specialist should not be disparaged.

Like a team of two horses, slowly pulling a heavy load out of the mire, the family physician and the specialist are side by side slowly but surely liberating the human race from the depths of disease. Their combined value cannot be measured in dollars and cents but rather in years of additional life. Together, they constitute the greatest team on earth.

AW! IT'S TOO MUCH EFFORT TO ROW ALL OF THIS BOAT!!
GRAHAM HUNTER
SHORT-SIGHTED LOCAL ECONOMIES
PUBLIC HEALTH BUDGET
DISEASE AND EPIDEMICS

IDIOSYNCRASY:



Are You Sensitive to—

Shellfish
Printer's Ink
Furs
Feathers
Flowers
Tobacco Smoke
"Horn" Rimmed Glasses
Perfumes
Telephone Ear-Pieces

?

By ELLIOTT R. WEYER

WHEN A sturdy old sea captain, a veteran in arctic exploration, breaks down and confesses that he has sometimes been seasick on land, and when a pioneer adventurer in the stratosphere admits that he can tolerate any atmospheric condition as long as it is free from tobacco smoke, one begins to realize what is meant by the scientific use of the term "idiosyncrasy." The sea captain referred to is none other than Captain "Bob" Bartlett who has sailed his schooner, *Morrissey,* northward on many a hazardous trip of icy adventure. That he should have experienced on land all the unpleasant symptoms which a landlubber would associate with a fishing trip off Cape Hatteras in an open dory is all the more startling when it is revealed that the attacks have always been associated with a proximity to dynamite. This explosive is almost as necessary to an arctic exploration as pemmican, for it is used in emergency to blast a lane for the ship through the sea ice. Captain Bob, knowing that dynamite may become temperamental when it is exposed to extreme cold, used to keep it warm and safe by carrying it about with him in his boots, until he learned that he and dynamite were not congenial.

Explosives and many "nitro" compounds are poison to many persons, even through casual contact. Tobacco smoke, on the other hand, is unpleasant to some, but rarely does it cause one to splutter and gasp as in the case of Professor Piccard. Those who have a genuine tobacco idiosyncrasy are often affected by only one blend, while they may tolerate and even enjoy others. Petty eccentricity? Not at all. The biologic reactions involved are more specifically accurate than the most expert chemical analysis.

These illustrations will serve as an introduction to the term "idiosyncrasy" as I shall use it. Through the processes of evolution the human physical make-up has acquired an adaptability that is not approached by any other biologic species. Man has proved his ability to live and thrive in any clime and under extremes of temperature and altitude. Considering that his menu includes selections from practically every biologic classification, from ants to whale blubber and from fungus to tree trunks, it is at once evident that he is not only ubiquitous but omnivorous.

It seems likely that idiosyncrasy is man's penalty for enjoying such extremes in versatility. Consider the guinea-pig whose diet consists of a few vegetables. Aside from occasional lapses when guinea-pig mother love runs amuck and the fond parent turns cannibal and devours her young, the guinea-pig eats little else than the vegetables and does not even drink water. Guinea-pigs are all alike. They have no individuality, no idiosyncrasy. It is this sameness which makes them dependable. A hundred million guinea-pigs can't be wrong; indeed one guinea-pig can scarcely make a mistake, for what a specified aggregate of conditions will not

do to one standard 250 gram animal, it will not do to another of the same weight.

Idiosyncrasy among human beings is not merely an occasional phenomenon. Statistically, 90 per cent of all adults are susceptible to reaction of more or less moment when brought into contact with some reagent. Some persons meet their Nemesis in fields of clover or at hay making time, others suffer an unjust punishment in the presence of horses or even when a black cat, or any other kind of a cat, crosses their path. These are the more common phases of idiosyncrasy. Our chief interest here lies among the rarer manifestations, often so obscure that years of suffering are endured before the causal agent is revealed and daily activities are adjusted or environment is modified to avoid it.

While the mechanism of idiosyncrasy is not understood, it is quite definite that two types exist. The first type is to be looked on as a disease in which the inherited physical make-up of the individual is such that he may readily acquire a peculiar sensitivity toward certain substances, generally those of a protein nature. This type gives rise to such familiar symptoms as hay fever and asthma. The tendency toward these conditions is inheritable, although blood relatives who are afflicted may not be affected at all by the same excitants. This transmission through inheritance closely follows the mendelian hypothesis. When both parents show symptoms, 75 per cent of the offspring may be expected to be susceptible. Like color blindness, the trait is transmitted through the female twice as often as through the male.

There is also a type of idiosyncrasy in which the victim displays a profound sensitivity when he is brought into contact with certain drugs and other chemical agents not necessarily of a protein nature. Fortunately the manifestations are often confined to the skin and give rise to a rash or to an eczema as, for example, in the case of poison ivy. Sensitivity to this particular excitant is so prevalent that an immunity to it might well be considered the exception rather than the rule. Poison ivy heads an interminable list of substances that cause endless discomfort when they come in contact with susceptible persons; that is, the discomfort is endless until the sufferer recognizes the particular excitant that is responsible and refrains from too close proximity to it. This type of idiosyncrasy has nothing to do with inheritance.

Often a common foodstuff is the offender. Many persons have an uncomfortable reaction after eating eggs, shellfish, strawberries and other foods, and some are unfortunately so sensitized that there are few foods left from which to choose a satisfactory diet. The eating of a forbidden fruit may cause any or all of a number of symptoms such as malaise, an itching sensation of the skin and mucous membranes, hives, sneezing and asthmatic breathing; even convulsions and complete prostration are not unknown sequelae.

Often contact with, or even proximity to, the fur of a particular animal will precipitate an asthmatic attack. The cat is the most frequent offender in this respect, leading the dog two to one. Horses are also offenders, and the list cannot be called complete until every animal species is included. Most women cannot afford an ermine wrap, but there are also some who cannot even wear borrowed ermine or appear in company with others who wear the fur. It is reasonable to imagine a person who would walk a mile to avoid a camel; certainly some summer vacationists are willing to travel farther than that to avoid the discomforts caused by ragweed and some other plants.

Feathers, like furs, are a menace to hypersensitive persons. The case of an acquaintance of mine who had suffered for years from a severe asthmatic condition illustrates this type of idiosyncrasy. He found, however, that his symptoms completely left him during a vacation spent in Florida, and he therefore passed as much time as his business permitted in the spot where he first found relief. It was assumed that some plants characteristic of the northern states were responsible for his distressing condition. After ten years of migrations between North and South, the gentleman submitted to a sensitivity test which showed that he reacted violently to chicken feathers. The pillows in his Florida cottage had been filled with goose feathers, which were harmless to him. With this revelation he offered the cottage for sale, complete except for the pillows, which he ordered sent north to replace the offending ones which contained chicken feathers. He has not had any trouble since.

That roses should be avoided by certain persons was mentioned in the writings of several medieval historians. John Pierius Valerianus, writing in 1678, refers to rose fever as follows:

> There are many persons who cannot endure the effluvia of roses and this includes some rather great men. When I was in Rome I saw Oliver Caraffa, a Cardinal of great celebrity who was forced to seek seclusion at that season when roses are in bloom and to shut himself up in a garden on the Quirinal. Guards were stationed at the gates so that no one coming either to confer with him or for the sake of friendship would bring along a rose.

DeRebecque, a Swiss physician of the seventeenth century, writes as follows of his own affliction:

> From my thirteenth year, at rose season I am attacked by a running catarrh in which a watery fluid flows from the nose and eyes. This condition lasts as long as the rose season. . . . In these parts (nose and eyes) and also in my ears teeth and gums pain was caused which lasted for several days.

Recognition of the etiology of what is now called hay fever came somewhat later. Bostock first used this term in 1828, in a paper read before the Medical-Chirurgical Society of Lon-

Goose feathers were harmless to him, but chicken feathers caused a violent reaction.

don, but he did not link hay fever with its true causal agent, the pollens of various plants. It occurred to him, however, that it might be due to the "aroma" of certain grasses.

Returning to more modern considerations, an interesting case in medical records is that in which a cafeteria worker complained of coughing spells and shortness of breath twice a week, precisely at 1:30 p. m. on Tuesdays and Fridays. An investigation by a health officer proved that at those times, shrimps were cooked; and sensitivity tests on the ailing employee showed him to be unaffected by any foodstuffs handled by the restaurant, except shrimps. After this discovery, relief followed. The shrimps were thereafter prepared in the cellar of the establishment. It is also recorded in medical literature that a child of 6 years had attacks of asthma when beans, peas or lentils were cooked in the home. Eating of these legumes produced in him a severe urticarial reaction, or hives.

It is usually supposed that some previous contact with the specific excitant must have occurred before actual sensitivity can exist. This is brought out in two cases in which persons invariably experienced prompt discomfort after eating a patented cereal product containing a mixture of rye, flaxseed and wheat. The symptoms were a burning sensation on the tongue and in the pharynx with an attending gastric upset of great severity. Skin sensitivity tests proved a hypersensitivity toward the cereal product, and differential tests showed that the offending element was the flaxseed. Questioning revealed that both patients remembered having had minor ailments treated by the application of flaxseed poultices. The poultices undoubtedly initiated the condition which later was revealed as a food idiosyncrasy.

The illustrations cited serve to show that the cause of the complaint is often hidden. Great patience and systematic investigation are often necessary before the means to relief can be discovered. Another characteristic of this class of diseases is the absence of any relation between the severity of the symptoms and the degree of contact with the exciting substances. To one who is a victim of rose fever, a single bloom in the button-hole would hardly be less aggravating than a day's sojourn in a rose arbor. One food-sensitive elderly woman was so reactive to green peas that alarming symptoms developed; convulsions were followed by extreme prostration even when a single pea was casually touched to the tip of her tongue. Indeed, what is one man's food may well be another's poison.

While looking through some medical journals of several years ago, I found the following case, which emphasizes the difficulty in tracing the source of the trouble: A hotel chambermaid contracted a blistered rash over her entire body. There did not seem to be any other symptoms, and her health otherwise was excellent. The condition became aggravated from time to time, and she was forced to take frequent vacations during which her skin returned to normal, almost over night. For a long time, her doctor thought that some food on the hotel fare was disagreeing with her, but a complete change of diet did her no good as long as she was employed at the hotel. Many treatments were instituted, and all local applications to the skin seemed to aggravate the rash. Areas denuded of the epithelium appeared, and a nervous state which dragged down the general health of the patient followed. According to the report she was given sensitivity tests which included soaps, cleaning powders, henna, poinsettia leaves, geranium flowers, parrot feathers, cactus and finally an insect powder. The insect powder was found to be responsible for the condition. A popular brand of insect powder

had been used by an exterminator some time previous in one of the bedrooms of which the patient had daily charge. Sweepings of dust from that room produced a severe local wheal when they were applied experimentally to the skin of her arm. She was given charge of the rooms on another floor and has had complete relief from her ailment.

There are many recorded instances in which printer's ink has caused dermatitis, but it has usually been confined to pressmen and other employees of printing establishments. Several isolated cases, however, have a slightly different aspect; as these have features in common, they will be reviewed here as one case. Mr. Jones went to his physician with a dermatitis of his hands, forehead, eyelids and cheeks; the swelling and itching had been present for several weeks. Soothing lotions had been applied, but at no time did they give complete relief. Finally the patient made a trip to California, where he experienced a prompt spontaneous cure; but on returning to Chicago he shortly relapsed to his previous condition. He began to notice that the symptoms were more aggravated on Mondays and Tuesdays; and when this was reported to his physician, he was told to keep a strictly accurate diary of his activities during every Sunday. This revealed the cause of the trouble. It lay in the particular type of ink used in the printing of the gravure section of the Sunday paper. He was fond of the picture section, and after perusing this part of the paper, it was his custom to lie down for a nap, covering his face with his hands. A minute quantity of the ink was thus transferred to his face. Abstinence from the "brown section" of the newspaper proved the rôle of the ink in his dermatitis.

A woman who never handled the gravure section of the newspapers was nevertheless seriously affected by the same type of ink. Her husband usually saved the picture section from the Sunday paper, and as it frequently reposed on her bureau, she often laid her comb and brush on it. An irritation of the scalp ensued.

When investigations were pushed further, it was found that the brown pigment used by the ink manufacturers is a derivative of paranitraniline which has long been known in chemical industry to be highly irritating to many skins although some persons are completely immune. Negroes are usually employed to manufacture the ink, as the Negro skin is resistant to its toxic effect. Green printing ink is also under suspicion, while the ordinary black variety is quite harmless. The natural oiliness of the skin is a safeguard against the various chemical dermatitises, and any treatment that tends to remove the natural oils tends also to aggravate the symptoms.

Perfumes and many other toilet preparations often produce an effect which is far from cosmetic. A case that was brought to my personal attention was that of a young woman who was given a large quantity of her favorite perfume by a relative returning from Paris. While she was anxiously awaiting the homecoming of her relative and the gift which had been promised her, she was also becoming sensitized to the particular ingredients contained in the favorite odor, the use of which now produces a severe rash even when the perfume is employed most sparingly. Clothing to which the perfume had been applied cannot now be worn by her.

Various toilet waters have been observed to cause dermatitis in susceptible persons. Berlock dermatitis, a peculiar type sometimes encountered, has been caused by the use of toilet waters and colognes. In this variety there is a persisting pigmentation of the skin after the acute eruption has subsided. It is particularly liable to follow the use of preparations containing bergamot oil, and the brown pigment is likely to become more intense if the skin is exposed to bright sunlight for a period. In other words, the tanning action of the sun seems to be intensified where the skin has been treated with bergamot oil if the skin is sensitive to this extract. Cosmetic use has been made of this phenomenon in the treatment of leukoderma, the white, unpigmented condition occurring in irregular patches on certain skins.

A case of dermatitis occurring vicariously was described by a family physician. A young married woman purchased a bottle of hair tonic and used it for a time. Not particularly caring for the brand, she gave the bottle to her husband who continued to use it. After the lapse of a sensitizing period of several weeks, she suffered a severe swelling of the eyelids and the nearby parts. Aside from a noticeable amelioration toward nightfall each day, the condition remained almost static for two months. The itching and burning were intense, and on arising in the morning she could open her eyes only with great difficulty. The hair tonic was finally identified as the excitant; and although it was used with impunity by the husband, the long bolster that they used instead of separate pillows acted as a carrier.

A new pair of spectacles of the "horn" rimmed type caused their wearer some consternation. A woman had worn them scarcely twenty minutes when she became the object of amused glances from passers-by. On reaching home, she consulted her mirror to find that each of her eyes was framed by a circular wheal. The pattern of the spectacle rims was traced in her flesh as if seared there by a cauterizing iron. Bilateral red streaks from eyes to ears were also developing. The myopic spinster must have been scientifically inclined; she pressed the spectacles to the flesh of her arm for several minutes and discovered that she could raise the disfiguring welt on other parts of her body

at will. This adventure in corrective optics returned her, of course, to the use of the more conservative gold rimmed glasses to which she had been accustomed, and it also informed her of the fact that she was hypersensitive to an ingredient present in the spectacle frames.

Many other manifestations of idiosyncrasy could be discussed. One man has never been able to hold even a brief telephone conversation without regret. He is sensitized to telephone ear-pieces. Workers in an English marmalade factory had to give up making marmalade. There is no lack of strange cases of sensitivity.

The public discussion of diseases and their symptomatology is bad form from one point of view, for a common idiosyncrasy peculiar to the human species is an uncanny susceptibility to contagion from the printed page. However, scientists are working on these problems, first, because idiosyncrasy is an absorbingly interesting subject and, second, because something practical may come of the research. In the meantime, idiosyncrasy furnishes a topic of conversation for many of us; for according to statistics, 90 per cent of the population have physical idiosyncrasies of one type or another.

HEALTHGRAMS ✣ from Articles in This Issue

¶Idiosyncrasy among human beings is not merely an occasional phenomenon. Statistically, 90 per cent of all adults are susceptible to reaction of more or less moment when they are brought into contact with some reagent.
See page 508

¶Two decades ago the average span of life was 35 years. Today it has been lengthened to 60 years, due to a greater understanding of the human body and a wider application of that knowledge. *See page 504*

¶One point which is not clear to some housewives is that, while evaporated milk will keep perfectly within the sealed container, it should be refrigerated as soon as the container is opened. *See page 528*

¶Insurance companies state that there is an 18 per cent reduction in the mortality rate among those who have yearly physical examinations. *See page 546*

¶Children should not be treated alike but should be disciplined according to their age differences, their physical and intellectual abilities and their temperaments. *See page 522*

¶Sodium fluoride is a poison peculiarly effective in exterminating cockroaches, and it is not injurious to human beings except in large doses.
See page 516

¶You really smell onion with your nose although you think you taste it with your tongue. *See page 552*

¶One of the chief aims in the vocation of a nursery school director is to develop correct social attitudes, which should begin just as early as possible in the young child's life.
See page 542

¶During his internship the young doctor receives, at most, $30 a month; most interns receive absolutely nothing. *See page 495*

¶A person wearing dentures may, unknowingly, be masticating food with 10 per cent efficiency when this could be increased 90 per cent by properly reconstructed dentures to suit a changed mouth. *See page 539*

¶Our motto for subnormal children should be: "Happiness first—all else follows"; this is an excellent educational ideal, not only for them but for the normal child in every home.
See page 532

¶The present-day tendency of doctors to educate patients and to take them into their confidence is having a healthy effect on what has long been held in awe and suspicion; namely, the consultation. *See page 498*

¶When you get something in your eye, have it removed by a doctor. Do not go to a druggist, a beauty parlor operator or a barber.
See page 519

¶The clinical thermometer, the stethoscope and the x-rays were all discovered through happy accidents. *See page 491*

¶Strong as the temptation is to interfere, it is wiser to let most children's quarrels adjust themselves. *See page 513*

¶Don't swim when you have a head cold. The advice that swimming, particularly in the ocean, is beneficial for colds is incorrect. *See page 525*

¶The English surgeon disdains the cognomen "Doctor," preferring to be called "Mister."
See page 535

My Children Quarrel So!

By
ELEANOR HUBBARD GARST

Century-Allen Photos

"Let's pretend we are all Cynthia's mothers. I know we can help her!"

THE DAY has been long. The cows broke into the alfalfa field. Ten of the young turkeys, apparently reveling in the best of health, turned up their toes and died. A cutworm worked his devastating havoc in the tomato patch. By nightfall, Mother feels that if Providence will give her strength for the next hour of supper and the children's bedtime, she may avoid a complete mental and physical collapse; she feels that one more thing will send her stark raving crazy. Then the children come swooping into the home from their chores and outdoor play. One starts with, "You did so!" A scuffling push. "I never neither!" A bang and bawl. "Aw, look at the big sissy!" "Sissy yourself, you're a big bully!"

What to do, what to do? Strangely enough, Mother does not go completely "haywire." From that last reservoir of strength granted the mothers of little children, she finds herself saying with apparent calmness, "Now, now—shush! Junior, after you wash for supper, get some apples. Sister, you look tired. Sit down, darling; and while you rest, show the baby the Mother Goose pictures. In-between, wouldn't you like to wash the celery?" The household machinery moves forward.

But when she and Mrs. Jones and Mrs. Doe meet next at the Ladies' Aid, they agree almost in a chorus, "Oh, yes, the children are fine. If only they didn't quarrel so! Do yours just about drive you crazy with their fighting?"

The first thing to realize about children's quarreling is that a certain amount of it is inevitable and even desirable. Home is the laboratory in which a child tries out various kinds of social adjustment. Those of us who have a number of children must realize that we are giving them a real advantage in providing such a laboratory. An only child has a real problem to face when he has to batter his way to social adjustment unequipped by the give-and-take of family life. So when they bicker and scuffle and shout, try to take it philosophically in the same way you do the baby's dribbling attempts to feed himself. Such quarrels are the growing pains that develop into social competency.

Strong as the temptation is to interfere, it is wiser to let most children's quarrels adjust themselves. The outsider seldom knows the whole teeming background. Sister looks like a sanctified martyr for your special benefit when Junior turns on her with a bellow of rage, but in

Wise mothers provide restful occupation for after-supper hours.

reality she has been acting the rôle of a mean little pussy cat and is getting exactly what she deserves. And, too, the protest of big children at parental relaxation of discipline in the case of the baby of the family is most often entirely justified. With what uncanny wisdom does the baby learn, almost before he talks, that he is particularly privileged! We parents so instinctively protect the little children from the older ones that too often we allow bright curls, dimples and huggableness to temper fair play, and so we victimize long-legged, awkward-aged big brother and sister.

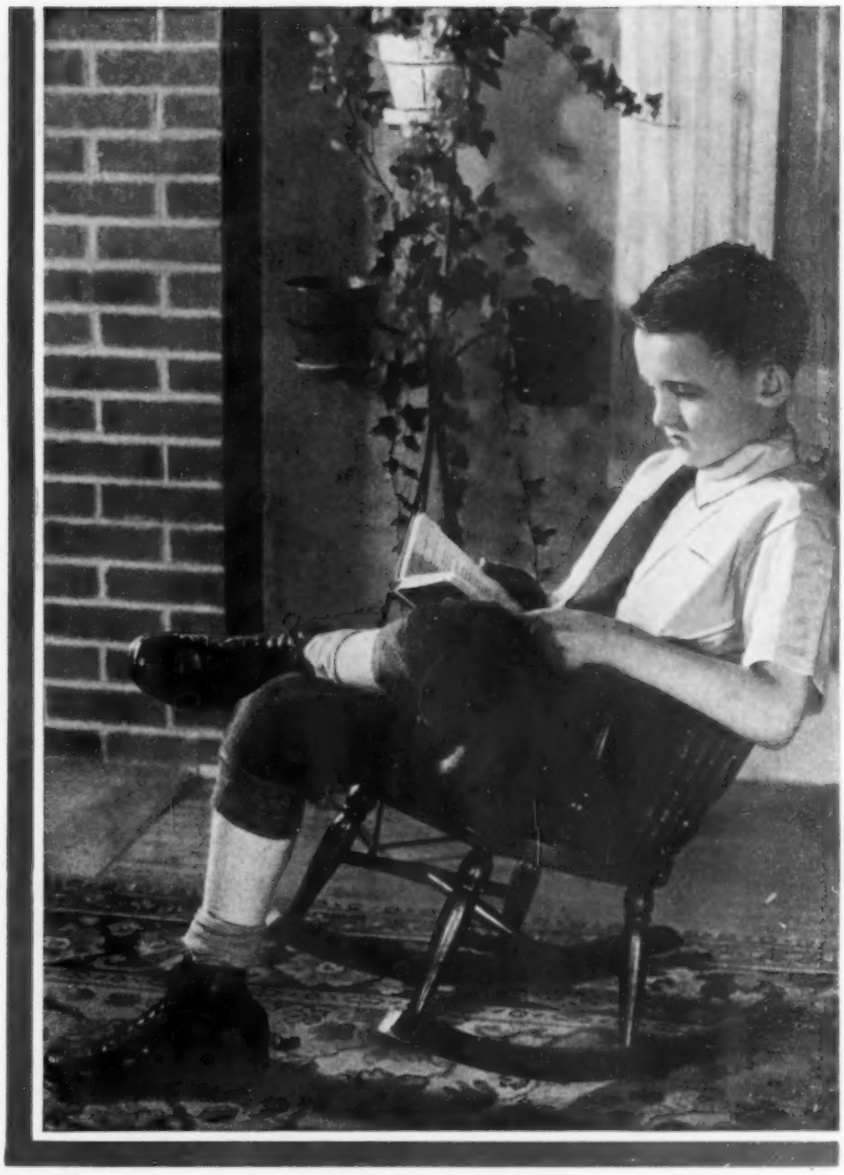
Granting the inevitability of some family quarreling, every thoughtful parent will want to minimize the causes of conflict as much as possible. As I look at my own family, there seem to be three major causes of discord. First of all is physical discomfort, such as fatigue or hunger. The same children who sing and giggle and joke their way into their clothes in the morning, slap and weep and shout their way out of them at night. A wise and foresighted mother anticipates the jangle of such fatigue, and in the hour or two before bedtime she has a comfortable reading light and a good book waiting in one corner of the room for Junior; some scraps of material, a well equipped workbasket and a plea for hot pan holders in another corner for big sister; there are blunt-pointed scissors and a pile of magazines for the 7 year old, and tea towels for the youngest to fold. A glass of cold milk, a good apple, raw carrots and salt, or a fresh tomato all have served many a time as magic sedatives in the hour or so before supper is actually on the table.

Then, too, a quiet place in which to lie down, completely apart from the family cooperative life, is an excellent safety valve. Even though each child cannot have his own room, there should be one room where a dog-tired person, whether mother or father, boy or girl, can find repose and solitude by the simple act of closing the door. It is possible to train children to understand that it is a pleasant thing to stretch out and rest in a quiet place when family life becomes too strenuous. I know well a philosophic little lad who announced calmly the other night. "Too much clatter, clatter for me. I'm going up to Mother's room, lie under the big eiderdown and think about the world."

The second major cause of quarreling is the inevitable struggle between individual and communal rights in the family organization. Each child should have a box under his bed or a play shelf or a drawer, where his own belongings are held inviolate. Mother must not turn 7 year old sister's brand new box of crayons over to the 3 year old, who will tear off the lid, break the red crayon, scribble on the shiny outside of the box and turn it back to sister on her return from school with every radiance of newness and completeness defaced. If big brother is building an airplane, little brother must know that he must not tamper with the elastic bands, the airplane silk and the balsa wood. On the other hand, children will work

out a fair plan for a communal possession, if they understand it as such. One bicycle, belonging jointly to 11 year old Sue and 9 year old Tom, was shared on an elaborate plan of going to and from school, after-school periods and Saturday outings that utterly bewildered the listening parent but seemed perfectly satisfactory to the participants. Among little children, the nursery school technic seems to work out happily. This allows each child to have, without disputation, any communal toy with which he is playing until he lays it down. In other words, children need both training in cooperative play and the security of protected personal possession; the two go hand in hand.

A third cause of jangle is the disparity in age among the members of a family group. Hobbledehoy 10 year old Jim is usually nothing more or less than "a pain in the neck" to fastidious big sister Ruth, who is at the delectable, maddening age of 13. It is a bitter mistake on a parent's part to override this basic antagonism. The mother should rather provide room for growth of spirit for each of the children according to the individual need. The children's chief bond will be athletic activity. They will enjoy swimming, hikes and "work up" baseball. But in the home let sister's sensitive spirit find protection, for it really needs the tenderest consideration for a few years. Give the child her own room, and feed her growing need for daintiness and order. Keep Jim busy with banging, constructive, high-powered, muscular activity.



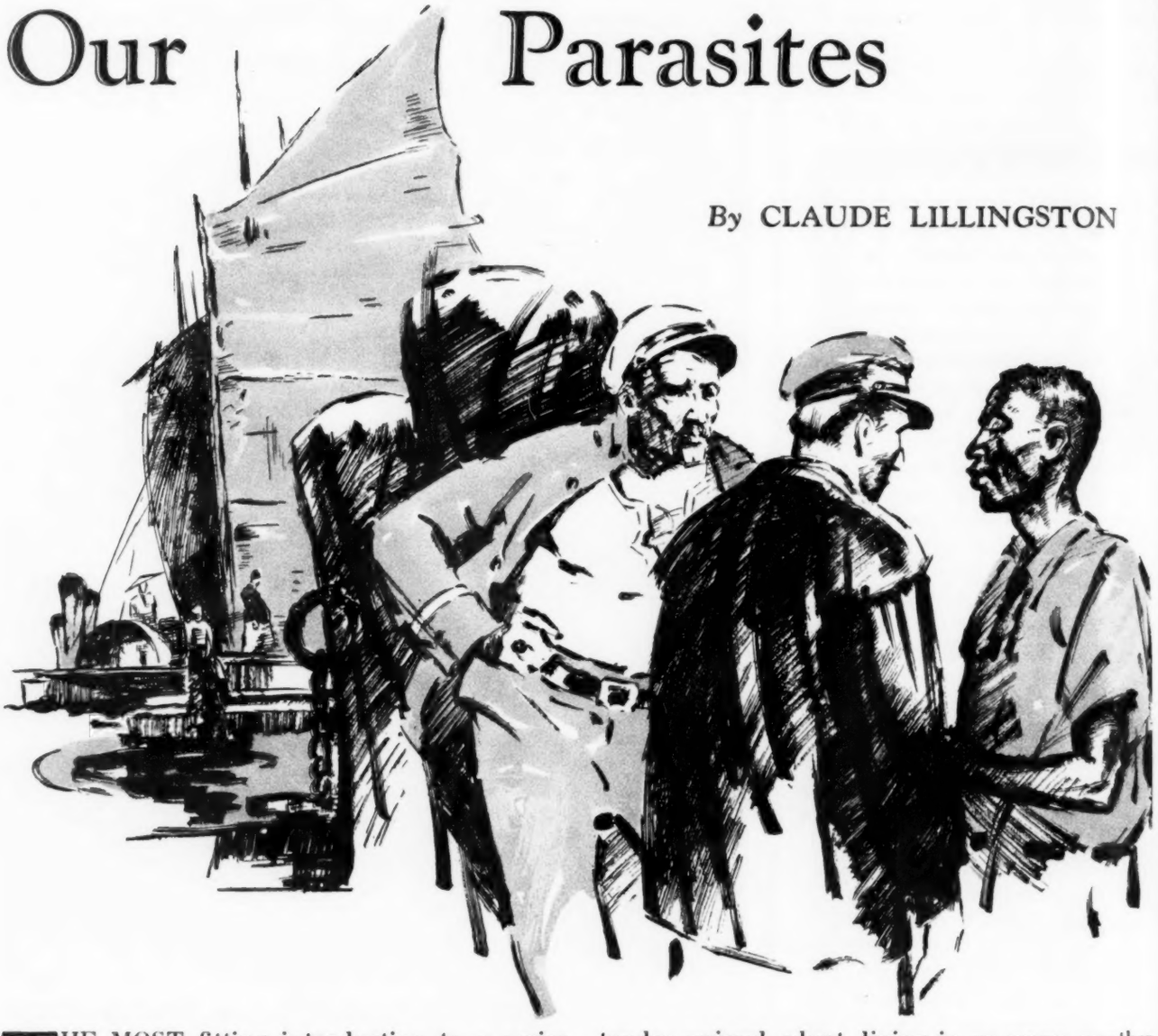
A good book is an antidote for prebedtime irritability.

The mother will find also that a plan of having the children and parents talk over with each other any special problems in family adjustment will work wonders to explain one child to another at some time of quiet parent-child companionship. I knew a family group in which there were three vigorous lusty boys who threw the one frail little sister into paroxysms of fatigued rage over and over again. The children were all little, but one morning when the tired little sister had gone off for a quiet ride with Dad, Mother called the three rampageous huskies to her and said, "Now, we are all going to help Cynthia get strong. We must be specially loving and gentle with her these days. Let's pretend that we are all her mothers. With four mothers who are quiet-voiced and kind, I know she'll grow strong." It was amusing and touching to see the way the three brothers constituted themselves a band of protection, and to hear the stern challenges they hurled at each other when they detected a slipping back from the high standard of maternal kindliness. "Is that the way mothers act to children?" they would check up on each other belligerently. Today the frail little sister is the huskiest of the lot and has slipped with perfect ease into the hard give-and-take of family life.

It is most comforting of all to remember that most quarrels are evidences of family growth. It is the mother's nervous irritation that makes them a festering sore point. When quarrels do arise, let her take them casually and humorously, and they will evaporate.

Our Parasites

By CLAUDE LILLINGSTON



THE MOST fitting introduction to a series of articles on parasites is a definition of the term "parasite," for definitions are supposed to clear the ground, to establish the limits within which the discussion must be confined. A reference to several dictionaries consulted at random has yielded such a mixed crop of definitions that it would seem that the word "parasite" has been employed from time to time with a loose-lipped generosity that is a trifle disconcerting to the pedantic lover of verbal precision.

According to Chambers' Twentieth Century Dictionary, a parasite is "one who frequents another's table: a hanger-on: a sycophant: a plant growing upon and nourished by the juices of another: an animal which lives on another—its host." Lengthy as is this definition, it fails to embrace parasites such as the cockroach which, fortunately for man, does not literally live on his person. It may, however, be argued that it "frequents another's table" in the sense that man's food is its food.

The definition of a parasite given by The Concise Oxford Dictionary is: "interested hanger-on, toady; animal, plant, living in or upon another and drawing nutriment directly from it; plant that climbs about another plant, wall, etc."

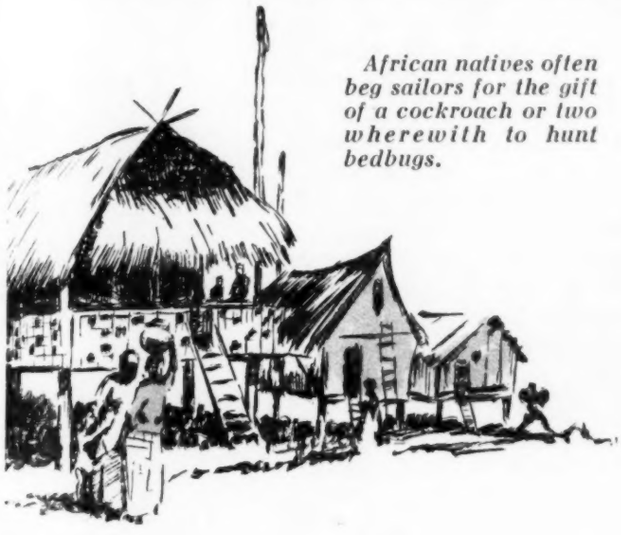
Dorland's Illustrated Medical Dictionary gives alternative definitions: "(1) A plant or animal which lives upon or within a living organism. (2) A fetus, or part of a fetus, that takes its sustenance from an autosite, or twin fetus." The same authority defines "commensal parasite" as one which "derives its sustenance from the food of its host," a definition which includes the peccant cockroach.

Skeat in his Concise Etymological Dictionary of the English Language defines a parasite as one "eating beside another at his table, a flatterer, toad-eater." According to Skeat, the word, which is derived from the Greek words meaning "beside" and "wheat," or "food," originally had a good connotation.

Were the mistletoe to be the classic example of a parasite, this good sense to which Skeat refers might, perhaps, have survived; but at the present time the term is assuredly used only in an opprobrious, hostile sense. Hostility to our

parasites is never likely to cease, but instead of maintaining an attitude of genteel and ignorant disgust toward them, we should do well to cultivate a scientific knowledge of them, the better to fight them. With such knowledge we may acquire a certain disciplinary control over them even in those cases in which annihilation is not possible.

As the study of the life histories of parasites proceeds, one is introduced into a new world in which the population shares with man the two most powerful instincts in life, that of survival and that of reproduction. As Sir William Leishman once said, "One must get into the very soul of a louse . . . if we are to wrest from it such secrets as we may hope to utilize." Hitherto such words as "louse" and "lousy" have been used only in a derogatory sense, but that merely



African natives often beg sailors for the gift of a cockroach or two wherewith to hunt bedbugs.

betrays our ignorance of the louse's soul. Like man, the louse has its love affairs and the amorous intrigues which such affairs inspire; and it is safe to prophesy that when man's knowledge of the inner life of the louse is complete, his reaction to it will become comprehensive, even though it remains as hostile as ever.

Chapter I

THE COCKROACH

THE BLATTIDAE family derives its title from the Latin word *blatta,* meaning beetle. But entomologists are agreed that cockroaches are not beetles, however persistently one of the most common of the cockroaches is called the black beetle. It is certainly black, but so are many other creatures that do not answer to the name of beetle. The cockroach family includes several hundred species. But there are only three species that have spread so extensively over the world and become so generally obnoxious as to be really notorious. They are the black Periplaneta orientalis; the lighter colored, reddish Periplaneta americana, and the small, active Periplaneta germanica or, as it is popularly known, the Croton bug. It is a curious fact that, as a rule, only one species of the cockroach family occurs in any given area in great numbers. Having pegged out its claim, the average cockroach species tends to regard with sour disfavor any incursions from isolated members of other species.

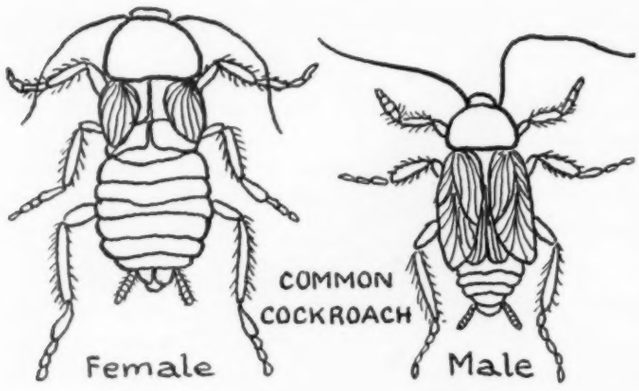
The Cockroach Has Traveled Far Afield

The primitive homes from which the various species have migrated cannot be accurately located, but it is probable that Periplaneta americana originally came from tropical America. This species still tends to haunt tropical habitations, as a rule, preferring greenhouses to colder dwellings. Periplaneta orientalis, as its name suggests, came from the East. It is supposed to have been first introduced into England and Holland about the time of Henry VIII of England. Following trade routes, this cockroach has never for long been able to dissociate itself from human beings. Historians relate, with a degree of accuracy which it is difficult to check, that the oriental cockroach spent some two centuries in London before traveling much farther afield. Be this as it may, it has traveled far since then.

Considering how large and varied the cockroach family is, it is no easy matter to give a concise description which can accurately be applied to every member. But, generally speaking, the male may be distinguished from the female by his well developed wings and wing covers and by the fact that he stands higher than the female, whose abdomen often trails on the ground. The purpose of the male's wings is not clear; probably they belong to a period in his remote ancestry when his forebears traveled by air. At the present time he makes little or no use of his wings, relying on the perfection of his foot work to get him out of danger.

The cockroach's anatomy includes a mandible provided with a toothed surface on which to grind an exceedingly mixed menu. Practically anything, from the toe nails of sailors to the dead bodies or cast-off skins of other members of the cockroach family, will do for his food. Even bedbugs are appreciated as food by the omnivorous cockroach; and sailors on ships passing the shores of Africa are often said to be solicited by the natives for the gift of a cockroach or two wherewith to hunt bedbugs. Other articles on the cockroach's menu are sputum, the scabs on the ulcers of lepers, its own eggs, woolen clothing, newspapers, ink, leather and even emery paper.

The cockroach's eye is fairly well developed, but, considering the fact that its sphere of activities is confined to the works of darkness, it is not surprising to find other well developed sense organs. The antennae, for example, wave wildly in the air in the cockroach's strenuous



endeavors to determine the character of the milieu in which it finds itself. According to Dr. A. E. Shipley, there are some 39,000 sensory nerve endings in the antennae of the male cockroach. These nerve endings are doubtless an olfactory guide to the cockroach's highly varied and seasoned menu.

Neither a Thing of Beauty nor a Joy Forever

Cockroach eggs are carried in capsules or cocoons shaped like ladies' hand-bags and secured to the under surface of the seventh abdominal segment in the female. As soon as it hatches out, the young cockroach is a miniature of its parents, not having had to spend probationary periods of its life in the caterpillar and pupa stages through which so many insects have to pass. With its small white body and large black eyes, the baby cockroach is certainly no object of beauty; but having at once to run about and seek its own food, it has no time or opportunity for introspective grief over its personal appearance. As it grows older, the baby cockroach changes its skin from time to time, even after adult life is reached. According to one authority the cockroach undergoes seven molts in the four years during which it is growing up, but it is probable that some species reach maturity much earlier. Cockroaches usually breed during the summer, but in this as in so many other respects they show themselves remarkably adaptable and willing to adjust their activities to circumstances.

It is a striking tribute to the fertility and versatility of the cockroach that it continues to prosper and multiply in spite of all the enemies by which it is surrounded. It has enemies both without and within. Its external enemies include man himself as well as the rat, cat, polecat, frog, toad and wasp, to mention only a few. Its internal foes include tiny parasitic beetles and round worms which prey on its digestive system. The effective defense the cockroach puts up against its external enemies depends on a wonderful combination of qualities. It can run with incredible speed, dodging and swerving like a chased rabbit. No polished surface is too slippery to hamper such dodging, for between the joints of the tarsus are certain soft, white, velvety patches which give the elusive cockroach a good purchase and enable it to leave its pursuer hopelessly outdistanced. Its own upper surface being perfectly smooth, it is difficult to hold when caught. Yet another defensive mechanism of the cockroach is the unpleasant smell it generates when attacked. The source of this smell is a sticky fluid secreted by glands on the back of the abdomen.

The list of complaints against the cockroach is long. As has already been seen, this parasite eats practically everything it meets, from the eyelashes of sleeping children, according to A. N. Caudell, to boot blacking. What it does not eat, it soils. Having devoured infected material such as sputum, which may contain germs as dangerous as tubercle bacilli, the cockroach discharges these germs in its feces on any food over which it may scramble. In the same way it may, during its peregrinations, transmit destructive molds from place to place and contribute to the premature souring of milk. In the Philippine Islands, cockroaches have been known to harbor plague bacilli. This indictment of the cockroach is far from being complete; there are other offences for which it has already been convicted. One can be sure that the reputation of the cockroach will become more and more notorious as the knowledge of its life history grows and as more is learned of the tiny parasites from which it suffers.

Making Life Miserable for the Cockroach

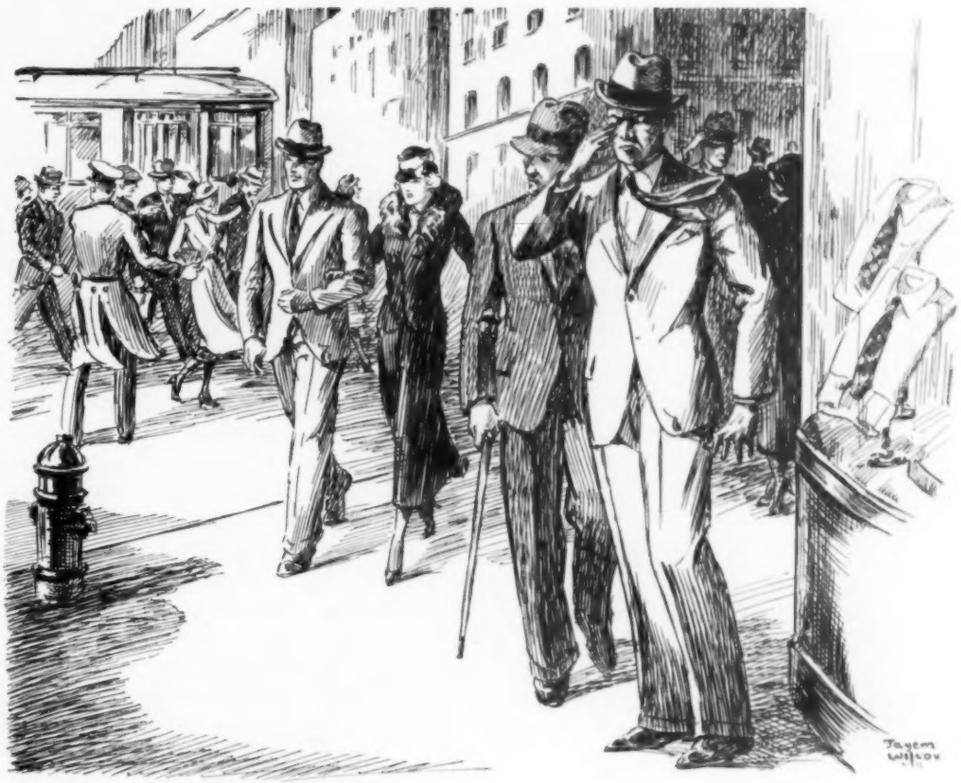
No easy and reliable short cut to the extermination of the cockroach has yet been discovered. On the other hand, much can be done to harass the parasite, to make life unpleasant for it, to keep down its numbers and to induce it to seek more congenial quarters. In a recent study, Dr. C. L. Williams of the U. S. Public Health Service has shown that the fumigation which successfully destroys rats on board ships merely lulls the cockroach to sleep. If the fumigation is so concentrated and is continued for so long a time that it becomes more than a sleeping draught for the adult cockroach, the eggs still remain for they are practically impervious to poison gas. Long after the gas has blown away, the baby cockroach can quietly emerge from its shell and begin feeding on the dead bodies of its parents if there is nothing more luscious at hand. In order, therefore, to free a ship completely of its cargo of cockroaches, it is necessary to deal with these pests by generations. Fumigation for the parents must be made on one occasion, and another fumigation is necessary several days later for their offspring. But such a double fumigation is often impossible when the ship has to put to sea before the second fumigation is due. The wholesale extermination of the cockroach on board ship is thus a much more knotty problem than that of many other pests.

(Continued on page 520)

Something in Your Eye?

By

J. ROBERT BURKE



When you feel something strike your eyeball, try not to close your lids.

A FOREIGN body on the eyeball or under the lids is a pesky thing. Most victims are miserable until it is removed, as the watering and severe pain can spoil any sort of activity and may even cause a sleepless night. If it is not removed, inflammation results and serious complications may arise.

When you feel something strike your eyeball, try not to close your lids. Of course this is the first instinctive reaction, that of protection, but the sudden forceful closing of the lid may be the means of further imbedding the particle in the eyeball. Hold the lids apart with your fingers, and let the sudden rush of tears, which nature provides, flush over the eyeball. The particle may be floated out in this way. Do this for a minute or so, and then close the lids carefully. If the same stinging sensation is felt, hold the head erect, look downward and grasp the edge of the upper lid in its central portion. Pull the upper lid down over the lower lid; and while still holding one lid against the other, roll the eyeballs upward and then release the upper lid. Often the edge of the lower lid, or its lashes, will brush off the particle if it is under the upper lid. If no relief is felt, try the same procedure once or twice more.

If these maneuvers do not bring success, it is quite likely that the foreign material is imbedded in the cornea, the clear shiny portion of the eyeball immediately in front of the pupil. This is an area with which you should not meddle. Keep the involved eye gently closed, and get to a doctor as quickly as you can. Do not go to a druggist, a beauty operator or a barber; your eye is too precious for experimentation. When your automobile needs attention, you never take it to a meat market. Avoid, as you would the plague, untrained persons who are always eager to help you.

Although I have been referring to the bit of dust or cinder that you might pick up on the street on a windy day, the same treatment may also be applied to detached eyelashes. In shops where emery wheels are used for grinding, there is always some chap who is too busy or too lazy to put on goggles, which are almost universally supplied for such work. A hot piece of metal strikes the eye, and there is a momentary sting; but it does not seem severe because the metal, by its intense heat, has killed the nerve endings in the cornea, and no further pain is felt for a few hours. Then the eye starts to water, and pain is produced because the nerves have started functioning again. In almost every shop and plant there is found a "divine healer" who believes that removing chips from eyes is his special province. He usually has a pocket knife, with a sharp pointed blade, which he keeps for just this purpose. After taking it from his jumper pocket and opening it with his soiled hands, he tells the sufferer to hold his eye still so that he may dig out the metal. If he gets it out at the first attempt it is a miracle, as it is impossible for any one to keep the eye still when the cornea is being jabbed at, since the

cornea is the most sensitive part of the whole body. If the operator tries a number of times, the surface of the cornea is broken over a large area; and because the knife has not been sterilized, infection is almost sure to occur. When this happens, the whole eyeball is in danger, or at least an ulcer can occur which may leave a permanent opacity with subsequent loss of vision. Even if you do not work in a shop, it is possible for you to get hot metal in your eye. You may be passing drillers working in the street and be unfortunate enough to have a chip fly from a tool. Whenever two metals meet forcefully, hot flying chips may be produced.

If you are a few hours from a doctor and anything like this happens, there are certain things you can do to make yourself more comfortable and protect the eye at the same time. If you have some boric acid ointment or plain petrolatum, never carbolated, put a generous supply against the eyeball and keep the eye closed. The salve will act as a lubricant, so that the tissue will not be irritated further. If you do not have this, take a tablespoonful of castor oil or olive oil and put it in a small glass or cup. Place this cup in a small pan of water, and boil the water for ten or fifteen minutes, but do not allow the water to reach the oil. Next, let the oil cool thoroughly; since oil retains heat for a long time, try a drop on the back of your hand to make certain that it has become completely cooled. If you do not have an eye-dropper, lie down and have some one pour the oil from the glass or cup directly onto the eyeball. Another way of administering the oil is to use a teaspoon that has been boiled for three minutes. After it has been thus sterilized, only the handle should be touched. A bit of the oil may be dipped up and poured on the eyeball. Close the eye, and keep it closed. Put in more oil every time the eye becomes too painful. If it is possible, keep both eyes closed, because every time you move your good eye, the affected one moves and more irritation is produced.

When planning a trip of any kind, always carry along 10 per cent boric acid ointment put up in an ophthalmic tube. It has a small tip that will enable you to squeeze the ointment directly from the tube on to the eyeball.

Do not allow any one to use matches, toothpicks or corners of handkerchiefs against your eyeball. Above all, never let an "eye-stone" or a seed of any kind be placed against the eyeball in the hope that in its ramblings it will knock out the foreign body. It would be like blasting a tree stump with a 10 inch shell; the stump would probably be removed, but much of the surrounding territory would be destroyed as well. Remember that every time you get something in your eye there is a chance for infection with its serious complications. Have these foreign bodies removed by a doctor.

Our Parasites

(*Continued from page 518*)

Anticockroach campaigns have revealed the interesting fact that the level of intelligence differs greatly in the various species of the cockroach family. The comparatively large and clumsy Periplaneta orientalis is much less nimble witted than its German cousin, which is said to be gifted with the cunning of a chased rat and the agility of a chamois. The oriental cockroach may be successfully trapped with fruit jars. To be effective, these jars should be deep and have smooth walls; the bait may be treacle, chocolate or any other article of food likely to beguile the cockroach to its destruction. More elaborate traps, especially made for the purpose, may be required for the wily German cockroach.

To employ against cockroaches any poison that is dangerous to human beings and domestic animals is so liable to lead to a tragedy that strenuous efforts have been made to find some substance whose poisonous action is more or less confined to, or peculiar to, the cockroach. Such a drug has been found in sodium fluoride, which is injurious to human beings only in large doses. It is said to kill the cockroach by contact alone; and, of course, if it is swallowed, the cockroach's fate is doubly sealed. The powder, either in the pure state or mixed with half as much flour or some similar substance, is dusted over the haunts of the cockroach.

Another useful cockroach poison is powdered borax mixed with three parts of powdered chocolate. The powdered borax may be blown in the pure state into cracks and crannies with a dust gun or blower. Sulphur may be used in the same way, on the assumption that the cockroach will depart in disgust if it is not left dead on the spot. Sweetened flour paste containing 1 or 2 per cent of phosphorus may be used both as a bait in a trap and as a direct poison. In such ways as these, it is possible to wage so effective a guerilla war on the cockroach that this highly nervous and intelligent creature may prefer a precipitate departure to residence in a home where the hospitality it enjoys is so pointedly lacking in cordiality.

[NOTE.—In the July HYGEIA, Dr. Lillingston will discuss "that great and enterprising traveler, the bedbug."]

Ewing Galloway

GIRL SCOUTS

An annual event in York, Maine, is the cleaning up of roadsides by Girl Scouts and members of garden clubs.

HAWAIIAN SLIDE

Boys in Hawaii find sport in the natural slide of the waterfall shown at the right.

J. Jay Hirz

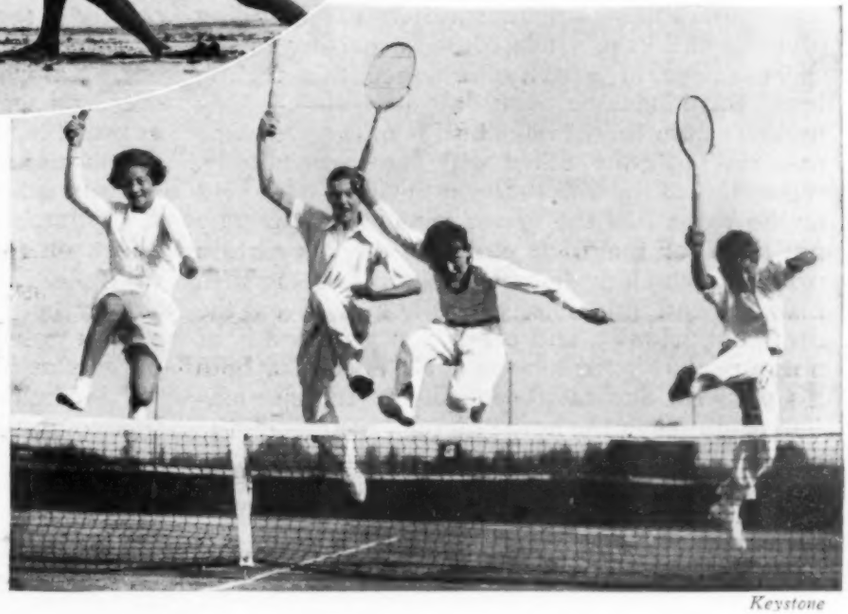
Keystone

HEALTHFUL EXERCISE

The beach at Weston-Super-Mare, England, is the scene of this beautiful pose by the Margaret Morris Dancers.

POTENTIAL CHAMPIONS

Participants in the Junior American Tennis Tournament leap the net on taking the courts at Frinton-on-Sea.



Keystone

Partiality to Children

By

E. S. Rademacher

In their efforts to avoid discrimination, they even count out the number of dishes each child must wipe.

EVERY MENTAL hygiene clinic at least once each week has some parent who comes for a discussion of his child's behavior and voices the expression, "Well I may make a lot of other mistakes in taking care of my children, but at least I don't show partiality. I treat them all alike."

A discourse on recollections of their own period of childhood usually follows. Invariably older brother was accorded many privileges always denied the other. Older brothers or sisters were excused from all the household work and drudgery because they had to study or because they were being helped by the parents toward a particular marital venture. Invariably, too, younger sister was sickly and had to be given special care and consideration. It sometimes seems that all present-day parents were definitely marked as the ugly ducklings of their earlier homes.

Because of their feelings of having been so discriminated against and of actually having been abused, they now seek to assure that such discrimination does not mark their own handling of their children. It is often surprising to see the excesses of activity to which this feeling leads them in their everyday discipline. They make certain that if one child is to receive some material gift, the other will fare accordingly, regardless of the difference in the children's ages or the value that the toy or trinket may or may not have for them. If one is allowed a certain privilege which perhaps is quite in keeping with his age and interests, the other is given the same opportunity and often this privilege is of a nature that is far too much advanced for both his physical and mental abilities. In the question of duties in the home there is such a definite and equal division of labor that sometimes even the actual number of dishes that each must wipe are counted out.

One of the first results of such a system is the developing of a zealous regard on the part of the child that he does not do too much work and that he is definitely granted his share of the spoils. Such a training system tends greatly to increase those little, insidious aspects of jealousy which exist between all children in homes. It also sets up tendencies in each constantly to seek out the shortcomings of the other and to complain of these constantly to the parent. Naturally as each complains of the other, each will seek methods of getting out of as much as possible, yet at the same time seek other ways of maintaining his place in parental favor.

From the psychologic standpoint such a discipline often has even more of a detrimental effect on the child's total adjustment. For example, if the older child in the home is constantly held to the same privileges, opportunities, toys and general consideration from his parents as his younger brother or sister, he will not be helped in the development of his own independence. Instead he will constantly be kept in a situation offering no challenge to his own initiative. He will begin to compare himself with less mature standards. Then outside the home, because greater effort is necessary for him to keep up with his own group, he will fall

back to association with younger children with whom he can make some semblance of adjustment with greater ease. He often becomes the whining child who feels himself markedly abused when any special task is asked of him.

There are disadvantages also from the standpoint of the younger child. He is accorded privileges and opportunities beyond his age and understanding. He often takes on a rather self-centered attitude and an increased sense of his own importance. Then when he is not catered to by children of his own age, he finds himself alone and untried; he does not know where he fits in according to his own accomplishments.

Frequently some child who has been referred to a clinic because of his disobedience at home, in discussing his home life will remark that every time he wants to go any place he has to take his younger brother with him. If he wants to go on a hike with his Boy Scout troop, his mother says he must take his brother or stay at home himself. This patient tells of the difficulties that this brother has in hiking and says that the other boys make fun of him and do not want to ask him to go along. The patient adds, "I have to take him everywhere; and if I don't, then my mother gets mad. I play with a bunch of little kids now because I can't have any fun when he is along all the time."

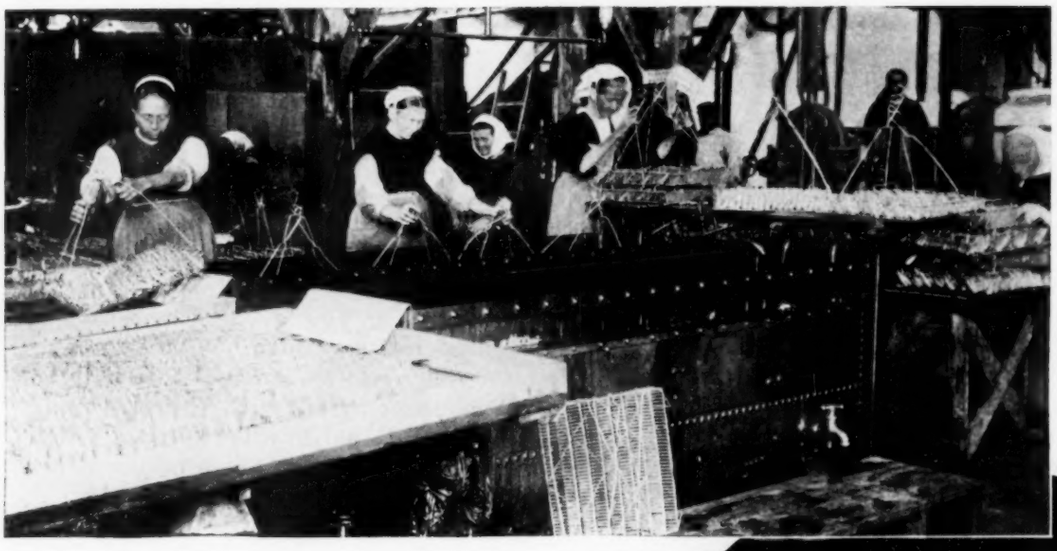
In one such case, the younger brother was also interviewed. He was far from being frank and open. Rather he was restless and inclined to be evasive; and when he was questioned as to his behavior at home, he spent considerable time in answering indirectly by discussing the marked disobedience of his older brother, thus enhancing his own goodness. He complained that his brother hit him when they went to the movies, and with a bit of glee he recited how his mother punished this brother when they got home. He was quite sure that his brother "hit him for nothing." When questioned as to his relationships to other boys of his age, it was discovered that this was a topic which he definitely wished to avoid and tended, for the most part, to talk in terms of how the boys always wanted to hit some one. Consequently he "goes with the great big kids." Yet in this case both parents were found to be strongly in accord with the idea of treating their children without any show of partiality.

At times partiality or favoritism is, of course, definitely accorded one child in a home. Such partiality is unfortunate for all the children concerned. There is, however, a difference between the idea of partiality or favoritism and that type of discipline which treats the children not alike but in keeping with their age differences, their physical and intellectual abilities and their temperaments.

Children should not be treated alike but should be disciplined according to these tenets. The older child should be given consideration as the older; this means a slightly greater allowance, a greater privilege and a greater amount of effort expended. More should be expected of him. The younger child who rebels at these considerations must be shown that when he too reaches this age he will at least be accorded the same privileges. This will make for less feeling of competition between children. It will give the older child the impetus to try. It will give the younger one a knowledge of his own expectations. It will help in the all important factor in the lives of all children—the provision of the best opportunities for them to learn to adjust themselves to their own contemporaries on a satisfactory basis.

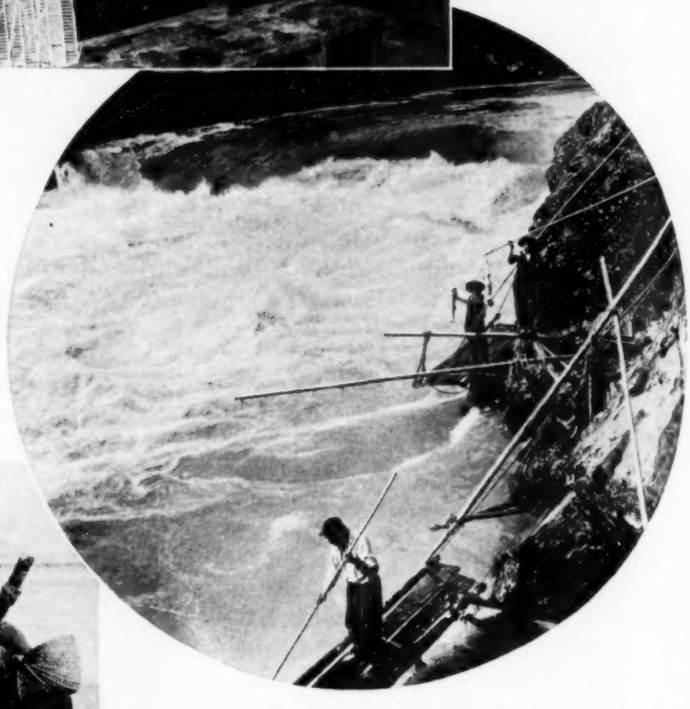
Under ordinary circumstances, it invariably is true that when a child is constantly seeking out playmates either much older or much younger than himself such a child is evidencing the result of a difficulty in his adjustment to his own age group. He is finding a way out by association with these other groups among whom he either becomes a willing tool and follower or the dominating leader who can force the others to his will. Neither of these relationships helps him to gain any confidence and happiness in his own achievements.

If he goes for a hike, he must take his younger brother along.



Sardines being boiled in oil in Brittany, France.

Now We'll Tell Some Fish Stories



Babine Indians spearing salmon in Bulkley River, Northwestern Canada.

Fishers of shrimp with their catch, Bay of Mont St. Michel, France.

Japanese fishermen using the cormorant, a voracious sea bird, for catching fish.

Photos by William Thompson

Safeguard Your Ears!

A Vacation Warning

By

HENRY DINTENFASS

OF ALL the special senses, only the visual sense takes precedence in importance over the auditory sense. Forty per cent of all adult persons suffer from deafness to a greater or lesser degree. Few persons realize that ear disorders are responsible for many cases of serious illness, such as blood infections, brain abscess and meningitis, often resulting fatally.

With the approach of the summer vacation, when the ear is especially prone to injury and infection, it is appropriate that this subject should receive particular attention. What steps should be taken to safeguard the ears and prevent, if possible, the usual ravages and toll of the swimming season? A brief review of the anatomy and physiology of the ear will promote an intelligent understanding of the subject.

The ear is composed of three parts, the external, the middle and the internal ear. The external ear consists of an outer shell or auricle and the external auditory canal, which is a tube about 1¼ inches long, studded with little protecting hairs. These hairs are imbedded in sacks called follicles which secrete a waxy substance. The purpose of the external ear is to collect sound waves, which in turn are received by the middle ear.

The middle ear, known also as the tympanic cavity, is a cube-shaped space. It is the strong box of the hearing apparatus and contains three little bones, the ossicles. A round membrane, the drum, separates the middle from the external ear, and to it is attached the outermost ossicle. These ossicles are connected in such a way as to form a bony chain of levers from the ear-drum across the tympanic cavity to its inner wall, and they have much to do with the transmission of sound, which is the special function of the middle ear. In addition, the middle ear has two important openings, one leading to the mastoid, a bony cavity filled with cells, and the other to the eustachian tube, which is a passageway to the nose and throat. By means of the eustachian tube, air enters the middle ear from the nose and is kept there at a certain pressure. Change in this air pressure interferes with the transmission of sound and causes impairment of hearing. The eustachian tube also acts as a canal to carry into the throat an excess of secretion which may occur in the middle ear. Obstruction of the eustachian tube produces an accumulation of this secretion and results in infection of the middle ear.

The internal ear is the so-called labyrinth. It lies in extremely close proximity to the brain and the brain covering and contains two separate and distinct structures. These are, first, the cochlea, a snail-shaped bone whose function is to receive sound waves from the middle ear and send them to the brain for interpretation, and second, a cluster of three tiny bony canals that serve to give us our sense of movement in space, or in other words to maintain our equilibrium. Diseases of the labyrinth, therefore, are characterized by total deafness, associated with a loss of equilibrium, which is manifested as dizziness and vertigo.

What are the causes of ear troubles and how do they originate? Commencing with the

external ear, there is the diseased condition that accompanies boils in the ear canal. This is called furunculosis and is unusually prevalent during the summer. This condition almost invariably follows some injury to the skin of the external auditory canal involving the hair follicles. Swimming, whether in the ocean or in swimming pools, is in a great many cases responsible for this injury, because of the irritation caused by the water. On the other hand, injury may also ensue from digging into the ear with an ear-spoon, hairpin loop, match head or some such instrument. The main symptoms are discomfort and earache. The pain is characterized by the fact that it is intensified by moving the jaw or the lobe of the ear; one may thus differentiate between a furuncular condition and an infection of the middle ear. Early attention is of paramount importance, for the single furuncle, if left to its own devices, would soon have many comrades.

The presence of wax is another condition of the external ear which is common during the summer and is responsible not only for discomfort but for a considerable degree of deafness. Normally wax is secreted by the follicles of the external canal. When the secretion becomes excessive, which happens frequently in many persons, it collects and forms a mass. During swimming, bathing and sometimes even after a shower-bath the entrance of water in the ear swells the wax, which blocks the external ear completely and shuts the drum-head off from the outside air; this produces an impairment of hearing. The treatment of this condition is proper douching by a competent person. Removal of the wax should not be attempted by the use of instruments except in skilled hands and under adequate illumination; otherwise injury and infection may occur, and furunculosis or other more serious trouble may result.

Warnings

For

THE WISE

A Few

Don'ts

For

VACATIONISTS *and* OTHERS

1. Don't neglect an earache; go to a reputable physician for an examination.
2. Don't introduce hairpins or other instruments into the ear to remove foreign bodies or to allay itching. Infection of the external ear or injury to the drum-head may result.
3. Don't use oils, chamomile tea and other substances of vegetable origin in the ear. They facilitate the growth of bacteria and help to increase infection.
4. Don't blow the nose forcibly when you have a head cold. This drives the infection up the eustachian tube and is conducive to disease of the middle ear. Instead, draw nasal secretions backward, to be expectorated from the mouth.
5. Don't swim when you have a head cold. The advice that swimming, particularly in the ocean, is beneficial for colds is incorrect.
6. Don't labor under the impression that covering the head and ears with a bathing cap will prevent involvement of the middle ear; the infection can enter the middle ear through the nose and eustachian tube.
7. Don't fear that an incision of the drum-head in case of abscess of the middle ear will cause deafness. On the contrary, if the operation is performed early, it helps to conserve the hearing by releasing the secretions that are pent up.
8. Don't swim when you have a running ear. Nothing could be more foolhardy. The probability of serious consequences is exceedingly great.

In considering diseases of the middle ear the attention is at once drawn to conditions of the drum or tympanic membrane, the most important of which is rupture or tear. Rupture of the drum is frequently caused by the use of ear-spoons, toothpicks and such things to remove actual or fancied wax flakes. It can also occur after diving or jumping from great heights into the water, or it may result from the sharp impact of a large wave. A box or slap on the ear even playfully administered may also be responsible. If such an injury is neglected, it invariably leads to some infection of the middle ear and may become a dangerous affair.

The most common ailment of the middle ear is inflammation, scientifically termed otitis media. This is usually the result of bacterial infection and may occur in two ways. The infection may come through a perforation or rupture of the ear-drum, but far more often it finds its way through the eustachian canal from an infected nasal sinus or from inflamed tonsils and adenoids. Improper or forceful blowing of the nose facilitates the progress of infection up the eustachian tube and so is an important factor in the causation of disease of the middle ear. This is especially so in children, for in them the eustachian tube is unusually short and wide. The nose should never be blown with both nostrils closed, especially in the presence of a cold. Children should be instructed to hold one nostril at a time, and adults should draw the nasal secretion backward to be expectorated from the mouth.

Bathing, especially diving or swimming under water, is also responsible for inflammation of the middle ear because water and bacteria may enter the middle ear through the nose by way of the eustachian tube, notwithstanding the insertion of oiled wool in the external

canal and the wearing of a rubber head cap for protection. In addition, the chilling that is also liable to occur during bathing may reduce vitality and lower bodily resistance to disease.

The symptoms of middle ear trouble are chiefly earache, fever and some loss of hearing. The earache may be intense, and in this case the treatment should be practical and sensible. Generally speaking, oils should not be used in the ear to relieve pain, since olive oil and other oils of vegetable origin furnish food for bacteria, engendering further complications. The same may be said of chamomile tea, which is still popular in some localities. A weak solution of carbolic acid in glycerin is excellent and answers all requirements. Heat should be applied to the ear in the form of a hot water bag or hot Turkish towels.

Fever is usually present in disease of the middle ear, especially in children. It may be the only indication of trouble, unless the ear-drum breaks and discharge appears. Consequently if there is an elevation of temperature in the young, a thorough examination of the ears should be made in every instance. Loss of hearing is also a common symptom. Often a patient complains of feeling a foreign body in the ear when the cause of the hearing impairment is really due to a beginning inflammation of the middle ear. With proper care the deafness will clear up when the tissues of the ear return to normal. Sometimes, however, improvement may not be altogether complete because of the presence of enlarged tonsils and adenoids or other nasal obstruction or because improper blowing of the nose has caused relaxation of the membrane of the ear-drum and thrown the chain of ossicles out of alinement. In that event, change of air pressure within the middle ear becomes permanent, and impairment of hearing remains. This condition is then known as catarrhal deafness. In the early stage of inflammation, the middle ear is filled with a fluid which is thin and straw colored and is called serum. Later, if improvement does not occur, the serum changes to pus, and pressure is made which produces bulging of the drum-head. If the drum is not treated, it will rupture. While a rupture will give temporary relief, it should not be permitted to happen, since a permanent perforation may result. When the drum-head is bulged and pain and fever are present, the drum should be freely opened by one whose training fits him to do it properly. As trouble in the ear subsides, the wound in the drum heals entirely. If the condition progresses because of a virulence of infection, the mastoid cells become invaded with pus and a mastoid operation is necessary. When this surgical procedure is insufficient, the disease may spread farther, extending to the large blood vessels close to the mastoid bone, to the brain and its covering or to the labyrinth, causing blood infection, brain abscess or meningitis.

Preventing ear troubles is much easier and far safer than treating them. Therefore, safeguard your ears!

You May Take a Vacation from Work—But Don't Take a Vacation from Health!

The July Hygeia brings pertinent points for a happy, healthful summer:

"Thirty years ago," writes *Curtis Billings*, "a statistician made a few calculations and discovered that since the birth of our nation more lives had been lost in celebrating independence than in winning it." In his article, "Hazardous Summer Days," Mr. Billings deals with Fourth of July dangers, motoring dangers, swimming dangers and other hazards and gives suggestions for a safe, sane and satisfactory summer.

In "The Story Behind the Little Purple Stamp," *Dorothy Walton* describes the work done by the government to safeguard health through the careful inspection of meat and meat products.

Dr. Robert Hayward Kennedy brings the hopeful message that deaths from cancer of the skin can be made practically nonexistent in this country.

The summer season with its hot weather problem in feeding will lose much of its terror for mothers of infants or small children if they will read and incorporate into their daily program the suggestions for safe and sane feeding which are offered by *Dr. Gaylord W. Graves*.

Dr. J. M. Wisan explains the need for preventive dental examinations and outlines the dangers of waiting for the toothache before doing anything for the teeth.

"So interested has the general public become in self reduction as a form of self preservation," declares *Dr. W. A. L. Styles* in "The Campaign Against Corpulence," "that a distinct revolt within recent years has been launched against the triumvirate régime of King Avoirdupois, General Sluggishness and Major Disability. Merely because discretion has not been combined with determination, failure crowns many efforts to regain normality in weight."

If you are a housewife or if you are "mechanically minded," you will find a fund of useful information in the article entitled "Refrigerator Facts," in which *Mary C. Brown* explains the mechanism of the refrigerator and tells how to group foods in it to obtain the most efficient results.

"What Can Parents Do About It?" *Lucile R. Stebbing* tells parents how they may make health more attractive and more profitable than invalidism and thus save their children from the mental quirks so many have acquired along with some illness.

A Housewife Looks at the Committee on Foods

ACCEPTED AMERICAN MEDICAL ASSN Committee on Foods

By Doris W. McCray

IX. Committee Acceptance of Evaporated Milk

"THE RAPID increase in the use of evaporated milk for infant feeding is noteworthy," said a learned practicing physician.

"I can sell quantities of milk to the condensery, whereas our small town would offer no market for it," said a farmer whose main source of income is milk.

"We must use clean milk of good quality in order to prevent losses, and we enforce the strictest sanitation in every part of our plant," said a production manager of an evaporated milk company when he explained to me, in detail, the elaborate routine followed in order to make certain that the milk received for evaporation is of a high grade. When I went through one of the finest evaporating plants in the world, I saw fresh milk brought in trucks to the receiving platform and followed it through the many processes until the neatly labeled cans were packed ready to be shipped to all parts of the world.

"I can make fine caramels without using fresh cream or butter," said the best candy maker in our city.

"I can make ice cream in my electric refrigerator without using whipping cream," said my neighbor.

A school teacher told me that her pupils had gained weight and that they did better school work in the afternoon since a milk drink made of evaporated milk had been served daily. A welfare worker reported economy in the use of evaporated milk as well as steady gains in the weight of undernourished children. These opinions are typical of those expressed by many persons concerned with the production and the use of evaporated milk.

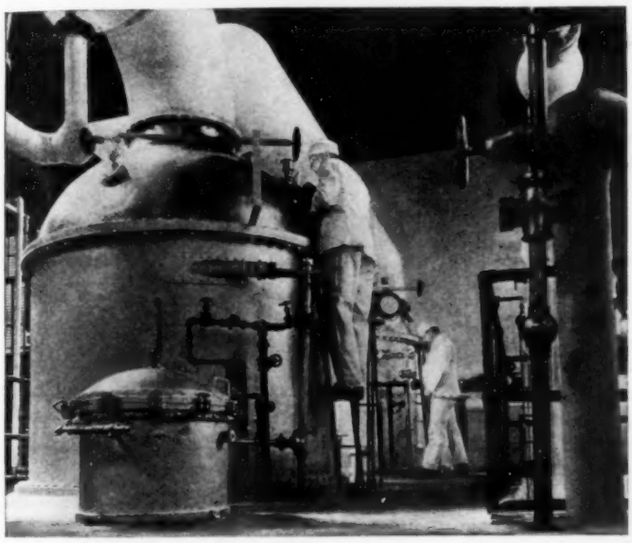
This discussion is being limited to evaporated milk. Evaporated milk should be differentiated from condensed milk, which is sweetened, and dried milk, which is bought in powdered form. All three differ in physical and chemical properties.

When the American Medical Association's Committee on Foods was instituted, the producers of evaporated milk had already organized and had done much work in the way of improving the product and winning popular acceptance, and they welcomed the opportunity of adding prestige to their various brands by compliance with the requirements for use of the Seal of Acceptance on packages and in advertising matter. The long list of accepted brands attests to this realization of the value of using the Seal.

In the receiving room, where the milk is weighed and sampled, tests for butter-fat and for acidity are made, and the keeping quality and cleanliness of the milk are determined.

Photo courtesy of Evaporated Milk Association

Before a brand of evaporated milk is accepted by the Committee on Foods of the American Medical Association, fourteen copies of all advertising matter and fourteen samples of the milk as marketed, accompanied by all sizes and types of labels, must be submitted, in addition to an accurate chemical analysis of the milk as marketed, and complete information regarding the following points: (1) the requirements for the raw milk used; (2) the regular examination made to assure that the raw milk fulfils those requirements; (3) the control exercised over the dairies producing the milk and over the deliveries to the condensery, and (4) a complete description of all steps involved in the manufacture of the evaporated milk, commencing with the raw milk as received and ending with the final packing. The purpose of obtaining this information is to allow the Committee members



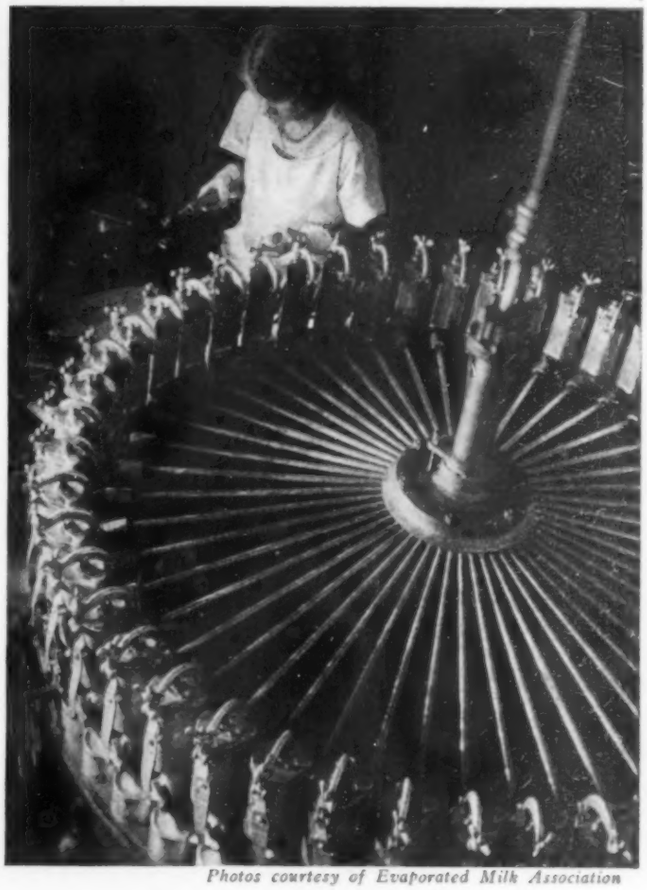
In the vacuum pans, milk preheated to 200 F. is evaporated at 130 F. under a 27 inch vacuum. This simply means that the air pressure is greatly reduced, causing the lowering of the boiling point of the milk, such as occurs on the tops of high mountains. Boiling the milk at this low point gives it less of a caramelized taste than it has when it is boiled down in an open kettle on the housewife's kitchen range.

to judge whether the milk received is satisfactory, clean and safe, and whether it is handled in a proper manner to assure that the final evaporated milk reaching the consumer will be acceptable in all respects. A careful review of the advertising material is made, in order to detect inaccurate or inappropriate statements which would serve to misinform the public.

The Seal of Acceptance on a can of milk assures the purchaser that the Committee on Foods has carefully considered the foregoing points from the standpoint of public health and welfare and has accepted the brand of milk as being clean, safe, and truthfully advertised.

The Committee on Foods has carefully reviewed and investigated all the literature put out by the Evaporated Milk Association, passed on the claims, and suggested needed changes, which were made. *The Journal of the American Medical Association* has published a brief but complete list of accepted basic claims for evaporated milk. The Evaporated Milk Association agrees to maintain its future advertising and publications entirely in compliance with Committee rules, and new claims are submitted to the Committee before being published by the association, which is a nonprofit bearing trade organization existing for the purpose of collecting reliable information on the values and uses of evaporated milk and promoting its general use. The association is composed of the majority of packers of evaporated milk, representing 90 per cent of the total production; the members finance the activities of the association in proportion to their individual production. The work of the association includes sponsoring research fellowships in various universities and colleges for the purpose of discovering scientific nutritional facts concerning evaporated milk, the distribution of educational literature and the conducting of lectures, exhibits and demonstrations. Many housewives think of evaporated milk as useful in baking and cooking, but they do not realize its full advantages for feeding children of all ages.

The milk is automatically measured and poured through small apertures in the tops of the cans by a filling machine which works at the rate of 120 cans a minute. The small hole is then sealed by machine with a drop of hot melted metal, and a girl touches a can now and then with her hot soldering iron to make sure it is completely sealed.



Photos courtesy of Evaporated Milk Association

Evaporated milk is one of the most convenient and economical forms of milk for preparing infant feeding formulas. Rubber bottle covers and a pitcher into which the can of milk may be inserted are convenient and practical aids.

The curd of evaporated milk resembles in physical structure the curd of human milk. It has a softer and more finely grained texture or structure than that produced from raw or pasteurized milk. In the illustration below are shown at the left the curd of human milk; in the center the curd of evaporated milk, and at the right the curd of ordinary milk.

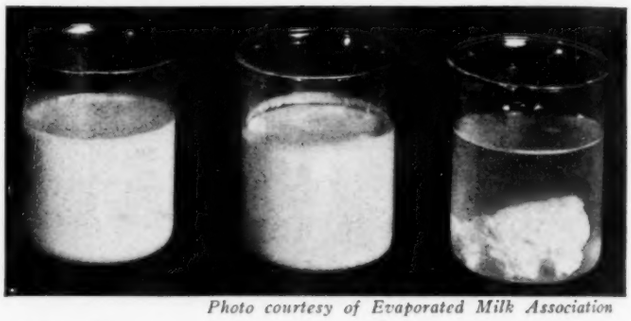


Photo courtesy of Evaporated Milk Association

It is interesting to note that babies, almost without exception, like the flavor of evaporated milk and that small children take it without hesitation. Older children often exhibit a strong liking for the flavor of evaporated milk, which differs from fresh milk, due probably to the slight caramelization of the milk sugar, or lactose, during the heating of the milk. Some children dislike the flavor of evaporated milk, but when it is explained to them that it is nothing but pure milk, having a "cooked" flavor similar to that obtained in boiling milk and rice for a pudding, they readily accept it; and older children may be told that cooking or pasteurizing of milk is a factor in safety from milk-borne epidemics. When a teacher or mother presents the correct explanation, dilutes the milk one-half, serves it ice-cold in attractive glassware, and requires that only a small amount is tasted, children and adults both can learn to like it. Such serving of the milk should be repeated once a week or oftener, under favorable conditions that foster a desire to learn to enjoy the milk. The flavor of evaporated milk in coffee has general acceptance, and it blends well with chocolate and fruits; it tastes well in mashed potatoes, but its difference from raw milk is noticed more in creamed vegetables. In some foreign countries the flavor of evaporated milk or the flavor of fresh boiled milk is preferred to the "beasty" taste of uncooked milk, and the easily recognized cooked flavor is associated with a milk that is safe.

There are times, when fresh milk is not available, that an understanding of the use and a liking for the flavor of evaporated milk are valuable. Every household should be supplied at all times with cans of unsweetened evaporated milk; otherwise there will be occasions when milk will not be used in cooking or when the children's supply of drinking milk will be cut short because of some extra cooked dishes that require milk. The wise mother uses milk whenever it is called for in a recipe, and she often chooses recipes which require milk, in order that she may include 1 pint of milk in the daily diet of every adult and 1 quart for every child. This rule is much more than an opinion or an analogy drawn from results in feeding animals; it rests on scientific evidence obtained by extensive and intensive experiments directly on the children themselves.

A statement accepted by the Committee on Foods reads as follows:

> Evaporated milk is pure fresh cow's milk with approximately 60 per cent of the water removed by evaporation under reduced pressure. It is not a patented or proprietary food but a staple commodity.

It is a fundamental principle that only a clean, pure, fresh milk will make a good evaporated milk. Market milk, as it comes from the cow, is actually 87 per cent water; all the solids and all the food value are in the remaining 13 per cent. Water is taken out of fresh milk to make evaporated milk, but nothing is added. Milk averages 87 per cent water, 3.7 per cent fat, 3.5 per cent protein, 5 per cent lactose and 0.8 per cent ash, but these proportions vary considerably with the various breeds of cattle and their care, feeding and physical condition. The composition of evaporated milk is more uniform than that of the usual milk because it is carefully standardized during manufacture to meet the U. S. Department of Agriculture's definition and standard for evaporated milk:

> . . . the product resulting from the evaporation of a considerable portion of the water from milk, or from milk with adjustment, if necessary, of the ratio of fat to nonfat solids by the addition or by the abstraction of

cream. It contains not less than 7.8 per cent of milk fat, nor less than 25.5 per cent of total milk solids; provided, however, that the sum of the percentages of milk fat and total milk solids be not less than 33.7.

If all the herds were Jersey, furnishing milk with 5 per cent fat, it might be necessary to add some skimmed milk; whereas, if all the herds were Holstein, furnishing milk with 3 per cent fat, it might be necessary to add some separated cream. A condensery drawing from a number of dairy herds usually finds that the composite milk averages in composition close to that required for producing a standard evaporated milk. The standardizing of the milk is accomplished by careful laboratory analysis and control.

The companies which furnished me with some of my information stressed the fact that they were always careful to have their milk slightly above the federal requirements. This is characteristic of those brands of milk which have been accepted by the Committee on Foods. These companies also stressed the fact that their own organizations had more rigid requirements than the minimum state legal requirements, and that they felt that the careful selection of fine quality raw milk was tremendously important in the production of an evaporated milk of superior flavor.

The executive of one evaporated milk company explained the evaporation procedure to me, and this may be considered typical of what happens in many condenseries. The story was fascinating as he told it to me. Roughly speaking, 100,000 pounds of raw milk a day is required by each condensery of this company; these condenseries must be located in dairy communities which will be able to furnish, within a restricted area, sufficient milk, or about 25 million pounds of raw milk a year. It is not practicable to have milk hauled farther than 50 miles, because it should reach the plant one hour after milking. The milk is cooled immediately after it is milked, and it should be no warmer than 60 F. when it is received at the condensery. The company keeps a field man on the job constantly, inspecting the dairies that furnish the milk. He uses a scoring system, and if a dairyman has too low a score, he is dropped; equipment, barns, milk houses and the condition of the health of the cows are scored. The condenseries are located in state accredited areas where inspection by the state veterinarian is provided and where there are restrictions on the bringing of new cattle into the accredited area. The field man checks up on the proper location of the milk house, its ventilation and lighting, the cleaning of the milking utensils and the cooling of the milk to 60 F. immediately after milking. He keeps the dairymen supplied with cotton filter disks which are used only once for straining the milk and are then discarded. He arranges for delivery of the milk to the condenseries in one of three ways: A contract hauler may haul the milk at a certain price for each hundred pounds; a group of six or seven farmers may take turns in bringing the milk to the plant, or each man may haul his own milk. The milk starts coming into the plant at 6 a. m. and is all there by 10 a. m.

The milk sent in by each farmer is kept separate, until it is weighed and sampled. The weight of butter-fat determines the price paid. A sample is taken and tested for butter-fat every week or two.

Of course, there are always some rejections of milk on account of the odor and flavor or the temperature of the milk when received. Milk with higher acidity than 0.13 per cent as lactic acid is rejected. Tests are used to show the keeping quality of the milk and to give an estimate of the cleanliness; a "good" milk is required according to this test. The entire lot of milk is mixed in glass-lined tanks, and a composite sample is taken to get the bacterial count. Since each can of milk is carefully selected before it is dumped into this tank, it is seldom necessary to discard the tankful of milk when the final bacterial test is taken, but a minimum count is insisted on. If the milk must be held, it is refrigerated; but ordinarily this is not necessary as the processing starts within two hours from the time the milk is received. The milk is heated to about 200 F. before it enters the vacuum pan for evaporation.

The company whose representative was explaining the process to me in such an interesting manner uses an evaporator which is continuous in operation; the milk enters at the top and is drawn off at the bottom. At a prescribed density, the evaporating process is halted; 2,000 pounds of market milk yields 897 pounds of evaporated milk.

The milk is next homogenized; under pressure of about 3,500 pounds for 1 square inch it is forced through small orifices or between flat surfaces, breaking down the fat globules to $\frac{1}{100}$ of their original size. The finely dispersed fat globules remain in suspension in the milk and do not rise to the top as they do in ordinary milk. Cream separation in raw milk is not looked on with disfavor, but in evaporated milk it is desirable that the fat does not separate. Cold water, brine or ammonia is then run through tight coils to reduce the temperature of the milk to 38 F.; after this cooling process the milk is pumped into storage tanks which are glass lined or made of stainless steel. The vacuum pans are pure copper, and their surfaces are scoured daily. Where new equipment is being installed, stainless steel is used to a greater extent, although copper has long been recognized as a safe metal to use in contact with milk.

The homogenized evaporated milk is standardized in fat and *(Continued on page 536)*

Children Who Never Grow Up

The finding of a wild boy in the woods near Paris marked the beginning of modern interest in backward children.

IN THE last year of the eighteenth century some hunters discovered a wild boy in the woods near Paris. He ran about like an animal and lived on acorns and such other food as he could find in the forest.

At that time it was believed that the failure of a child's mind to develop normally was the result of poor environment. This wild boy was placed in a home where he received the best of care. A noted physician of Paris became interested in him and devoted his life to the boy's education. After many years of careful teaching and study, this boy learned to feed himself and to care for his ordinary wants, but his mental ability never developed beyond that of a normal child of 4 or 5 years of age.

The history of this boy marks the beginning of modern interest in backward children. The great scientists of a hundred years ago did not succeed in making this boy a useful member of society, but they did develop a system of education for subnormal children which is widely used today. They also discovered that a child's ability to learn is determined by the level of his intelligence, and that while good methods of training may make use of that intelligence, they cannot materially increase it.

It is recognized today that the mental abilities of children increase through growth rather than by training. Some children are born with a limited capacity for mental growth. Other children may lose their capacity for such growth because of accidents or illnesses which cause arrested mental development.

A mother took her 7 year old daughter to a school devoted to the interests of those whose minds have not developed normally. This child came of a fine family and was born under favorable circumstances; but as the months passed, the mother noticed that her little girl did not respond as ordinary babies do. She did not sit up until 11 months of age, whereas most infants do so at 5 or 6 months. She seemed unable to concentrate, and she was not interested in toys. When she was 22 months old, she could not walk or even stand alone. She did not show any signs of using even the simplest words. Her sister was an unusually bright child, so that the mother had a good opportunity to observe that something was wrong with her second daughter. She consulted a physician, who saw immediately that the thyroid gland, one of the glands controlling normal growth, was not doing its proper work.

It has been known for some time that the thyroid gland, which is situated at the base of the neck, produces thyroxine, a secretion which is necessary for normal mental and physical development. When the thyroid gland is inactive, the doctor prescribes medicine containing thyroxine to stimulate normal growth. Such treatment often produces remarkable results. Under this treatment the child devel-

By EDGAR A. DOLL

oped so rapidly that within four weeks she began to walk, and a little later she began to talk. Her body also soon showed those physical changes that mothers recognize when babies outgrow their high-chairs.

At the time treatment was begun, this child's development was hardly more than that of an infant 6 months of age. Under the thyroid treatment she developed rapidly during the next five years, so that now, at 7 years of age, she is retarded only one year in mental ability. It is probable that with continued treatment her mental growth may even reach the average normal level.

Children with thyroid deficiency are called cretins; there are not many children of this type. Another type, known as the mongolian type, is seen more often than the cretin. In some respects these children look like persons of the yellow, or Mongol, race. They have slanting eyes, short stature, stubby hands, and long, pointed tongues, crossed by deep furrows. Sometimes children of the mongolian type respond to special medicines; but generally they are permanently retarded in mental and physical growth, and usually they do not develop beyond the level of a 4 or 5 year old child.

Mental subnormality is sometimes caused by injuries at the time of birth. Such children are usually crippled as well as backward. Fortunately, childbirth is less dangerous today than in years gone by. The family physician takes all possible precautions to prevent injury to the mother and child at the time of birth. But sometimes birth injuries are unavoidable, even after the best of prenatal care and with the most skilful attention. Fortunately, the number of such children is so small that the expectant mother does not need to be alarmed. The likelihood of such a misfortune can largely be avoided if mothers will seek medical advice as soon as it is learned that a child is expected.

Mentally deficient children are those whose minds have not developed normally. Such children usually are backward from early infancy, but this backwardness often is not observed until the child is ready to go to school. While the mother may have some fear that her child is not developing as other children do, this fear does not usually become alarming until the child enters school and fails to keep up with other children. Sometimes the backwardness is not noticed until the child has failed several grades or until about 10 years of age. Such children usually show poor judgment and limited reasoning ability. Their understanding is weak, and they cannot carry much responsibility.

When a parent suspects that a child is not developing normally, it is always advisable to consult the family physician. If the physician is in doubt, he will usually recommend that the child should be taken to a mental hygiene clinic or to a psychologist for mental examination. In this examination the child is given a number of mental tests which are, of course, entirely harmless and which the child really enjoys. These tests are designed to reveal the child's level of development. The well informed mother knows from general observation what things the average normal child can do at various ages, and she may compare her child with such a standard. In the mental hygiene clinic these observations and standards are employed with scientific accuracy. Thus it is possible to make a reliable estimate of the child's present mental development and to predict what further development may be expected in the years to come.

Backwardness in children shows in varying degrees. Some children do not develop mentally beyond the level of a 2 year old child.

These children usually do not learn to talk readily and often cannot even feed themselves or care for their personal wants. They do not protect themselves from ordinary dangers.

Other children, suffering a subnormality of milder degree, may attain a mental development similar to that of the normal child of from 3 to 7 years of age. These children can feed themselves, can care for their personal needs and can guard against ordinary dangers. They usually do not succeed in school work beyond the first grade and are not able to learn any but the simplest household tasks. They must receive constant supervision and direction.

Children who are on the borderline of subnormality correspond to normal children between 8 and 12 years of age. They are known as morons. They succeed in school work up to about the fourth or fifth grade, but they do not show good judgment in managing their own affairs. Under favorable circumstances they get along fairly well and can do some useful work. Under unfavorable circumstances they show poor self control and may become wayward or delinquent.

Mental deficiency in children, especially of the milder degrees, can often be traced to a similar condition in other members of the family. Such children may come from poor stock, or the condition may have been present in previous generations of a family that has since come into good social standing. If they are brought up in a good environment, such children usually respond favorably to home and school training. But if the family is of poor social stock, the child may suffer the double handicap of poor heredity and poor environment.

The question is often asked, "What can be done to improve the condition of mentally deficient children?" This will depend in part on the cause of the condition. As has already been stated, some children respond to medical treatment and others to home and school training. If the cause can be traced to the glands of internal secretion, medical treatment may prove helpful. If the condition is due to an accident during childhood, operations under certain conditions may yield good results. In the case of children who are injured at birth there is usually some tendency toward improvement later in life, both mentally and physically.

For the majority of subnormal children special education and training offer the most hope. Public and private institutions in which good training is provided under favorable conditions are available for the care of the mentally subnormal. Many school systems provide special classes where excellent results are obtained. In these ways the abilities of the subnormal child are developed with due regard for his handicaps. Habit training and occupational training are more successful than ordinary book work.

The hesitation which most parents have in placing a mentally deficient child in an institutional school or in a special class in the public school is usually not justified, for most such institutions and classes provide high standards of care and training.

Subnormal children do not succeed well in the regular grades, but they usually make excellent progress when they are placed with others like themselves, especially when the educational program is adjusted so as to teach them only as much as they are able to learn and to use.

Many subnormal children are cared for in their own homes. This may be satisfactory if the child can attend a special class nearby and if the conditions in the home are favorable. Such home care, however, usually places a heavy burden on the parents as well as on the normal brothers and sisters. It also deprives the child of suitable companionship.

The majority of subnormal children make fairly good social adjustments if their early training is satisfactory. Such training tends to prevent delinquency or misconduct and helps to make the child happy and useful, provided his surroundings and his occupation do not demand more of him than he can give.

Many persons have an erroneous belief that retarded children are unpleasant to live with and that it is impossible to educate them. Some persons also have the mistaken idea that a public institution is a place where children are "put away" and forgotten or where they do not receive sympathetic care.

Such ideas are far from the truth. These children who never grow up are in most respects carefree, happy children, who are seldom aware of their mental retardation. They have much the same hopes, the same joys and the same interests of childhood as healthy, normal children. They respond to friendly sympathy, and they can be taught many useful things. They are happy with their fellows when their world is simplified according to their abilities. They grow up physically, but they remain children mentally.

In France, such children are considered as the specially chosen of God. St. Paul tells us to "comfort the feebleminded." Intelligent sympathy and a charitable attitude toward them increases their social success and their occupational usefulness. Our motto for these children should be: "Happiness first—all else follows"; this is an excellent educational ideal, not only for them but for the normal child in every home.

The scientific study of the subnormal child has indeed added much to our knowledge of the normal child. It may well be that in properly caring for these exceptional children we shall reach a better understanding of all children, everywhere.

Oh, Doctor!

By

WINGATE M. JOHNSON

MY FATHER was a Doctor of Divinity, one sister is a Doctor of Philosophy, while I am a Doctor of Medicine. A first cousin is a Doctor of Laws, another cousin a Doctor of Theology, two others are Doctors of Dental Surgery, while still another is a Doctor of Medicine. This bit of family history is not an egotistic outburst; it is merely given as proof that the rest of my remarks are not inspired by any feeling of "sour grapes."

According to the latest edition of the Standard Dictionary, the word "doctor" is given twelve separate definitions. The first is "a practitioner of medicine or surgery"; the second, "a person who has received a diploma of the highest degree in a faculty, as of divinity, law, etc., as evidence of his learning and ability to teach."

His card introduced him as "Dr. James Brown, Graduate of the Blank School of Tree Surgery."

In spite of the high-sounding definition which the dictionary places second in its batting order, I maintain that the title "doctor" is the cheapest of all prefixes and the one most easily obtained. A little reflection will convince almost any one of the truth of this statement. For example, how familiar in any town a few years ago was the sight of a long-haired man with a wide hat, standing on a box, peddling bottles of colored water to gaping morons. It may be argued that his knowledge of applied psychology entitled him to dub himself a doctor, but it must also be admitted that to capitalize the low average intelligence of America is a cheap way to win a title. It is a common experience to go into a small, suburban drug store and be informed by the boy in charge of the soda fountain that "the doctor," meaning the prescription clerk, is out Recently a young man rang my door-bell and presented his card, which introduced him as "Dr. James Brown, Graduate of the Blank School of Tree Surgery," and he asked whether he might not trim the oak trees in my yard.

These examples might be multiplied, and every reader can add others. The same dictionary that so flatters the possessor of a fairly earned doctorate helps to prove my contention. Other definitions given for the word doctor are "the steward or cook on a sailing vessel" and "a jack-of-all-trades," a definition, it must be admitted, which might almost be applied to a general practitioner of medicine. Even inanimate objects are so named, as "an auxiliary or donkey engine"; "a liquor employed to make poor wine or beer palatable."

In another place this dictionary lists more than thirty degrees, each entitling its owner to be addressed as "Doctor," beginning with D. A., or Doctor of Aesthetics, and ending with D. Z., Doctor of Zoology. About half of these degrees are earned by completing a prescribed amount of study; the other half are given as honorary degrees, which may mean much or little.

A much loved pastor of my acquaintance, once told me that his title, Doctor of Divinity, means only that the preacher who is the possessor is respectable and 40. Although the D.D. degree is considered a strictly honorary title, at least one "diploma mill" did a thriving business for several years in selling D.D. degrees for $50 apiece, until it was exposed by an outraged denominational press. This recalls the time-worn rhyme about the preacher named Fiddle, who refused to accept a degree, because he preferred to be plain Fiddle than to become Fiddle, D.D. There is also the story of the board of

Negro deacons who were anxious for their pastor to become a "D.D." After learning that the cost would be $50, they wrote to know whether the faculty would not send one "D" for $25, and reserve the second "D" until the remaining $25 could be raised.

To illustrate the cheapness of the title, the story has been told that a prominent citizen of a Southern town, who had been forewarned that he was to be introduced to Booker T. Washington, was in a quandary as to how to address him. His Southern instincts revolted against saying "Mr. Washington," yet the guest was too great a man to be addressed familiarly as "Booker." Finally, after some quick thinking, the Southerner found a way out. Grasping the famous Negro cordially by the hand, he said, "I am glad to meet you, Doctor Washington."

Notwithstanding the comprehensiveness of the Standard Dictionary list, the overwhelming majority of those answering to the name of "doctor" are not to be found in that list. They form a heterogeneous group that includes chiropractors, veterinarians, optometrists, druggists, "patent medicine" venders, wart removers, cancer quacks and numerous others. In reflecting on the personnel of this group, I derived a grim satisfaction from dictionary definition number eight: "among uncivilized people, a medicine man or conjurer."

Since the excessive popularization of education, or rather of educational institutions, a great premium has been placed on degrees, not so much for what the degree represents as for the parchment itself. One educator has offered as a solution of the problem the passing of a law conferring the B.A. degree on every child born in America. With a degree provided at birth, a college education would be optional and would be sought only by those to whom it would mean something.

This idea might be extended further, to offer the title of "Doctor" to any one who cares enough to ask for it. After it had become widely enough distributed, the good old prefix "Mister" would become so rare as to be a mark of distinction. Already the English surgeon disdains the cognomen "Doctor," preferring to be called "Mister." It might be possible to secure permission from the Royal College of Surgeons for all practitioners of medicine to share in this distinction. Another advantage of this idea is that it would offer a ready means of differentiating male and female physicians. The old-fashioned term "Mistress" might be reserved for the lady doctor.

Best of all, this plan would eliminate the humiliation to medical men of being addressed by the most abominable colloquialism that ever offended the ears of a professional man—"Doc."

A Housewife Looks at the Committee on Foods

(*Continued from page 531*)

total milk solids content to comply with the definition and standard of the U. S. Department of Agriculture for evaporated milk. After overnight storage, the adjusted milk is automatically measured and sealed in cans.

The sterilizer used by this company is a continuous sterilizer which has the advantage of a more even temperature, although the "batch" sterilizer has the advantage of accommodating a large truck load of cans at one time. In any case, the machine or retort is built for agitating the cans in order to prevent a scum from forming on the top of the milk and to allow uniform heat penetration. The sterilizing temperature is about 240 F.; from fifteen to twenty minutes is required to bring the milk up to that temperature, and it is held at that point sufficiently long to destroy all bacteria. It is this sterilizing process that makes evaporated milk absolutely the safest you can buy, from the standpoint of possible contamination with disease germs in the milking, handling, bottling, delivering and even in the home after the milk has been delivered. The Committee on Foods has accepted the statement that evaporated milk is sterile and therefore is the safest milk obtainable. It cannot introduce pathogenic microorganisms to induce diarrhea in infants. It cannot cause tuberculosis or other diseases in adults.

Following the processing, cold water is put into the retort, and the milk is cooled to 100 F., after which it is stored at room temperature in the plant for ten days to let fermentation occur in possible leaky cans so that these cans may be detected and discarded.

Representative samples are checked in the laboratory for composition, fat, total solids and net weight. Duplicate samples are sent to a check laboratory, including six samples of each lot, each batch or each day's run. Color, texture, flavor and body, or density, are checked, and so far as bacteria are concerned, this company requires that the milk shall be absolutely sterile. Samples are stored six months, and one sample is examined each month. So far as it is possible, ordinary warehouse conditions are followed in order to determine what is happening to the milk that has been shipped out to warehouses, particularly in the South, and during extremely hot weather in the North. While, practically speaking, evaporated (*Continued on page 568*)

Acme

Crippled children at the Georgia Warm Springs Foundation now have doors opened magically for them. As they cross the light path of the photronic cell, electric energy is created which opens the doors. This new robot of science is a boon to patients with infantile paralysis who need their hands to help them move about.

Publishers Photo Service

The little Ceylonese who is getting the outdoor bath above may well wish for the privacy of a bathroom. How he would envy his Chinese cousins who are gradually being interested in the concrete tubs shown at the left.

Burton Holmes from Ewing Galloway

Acme

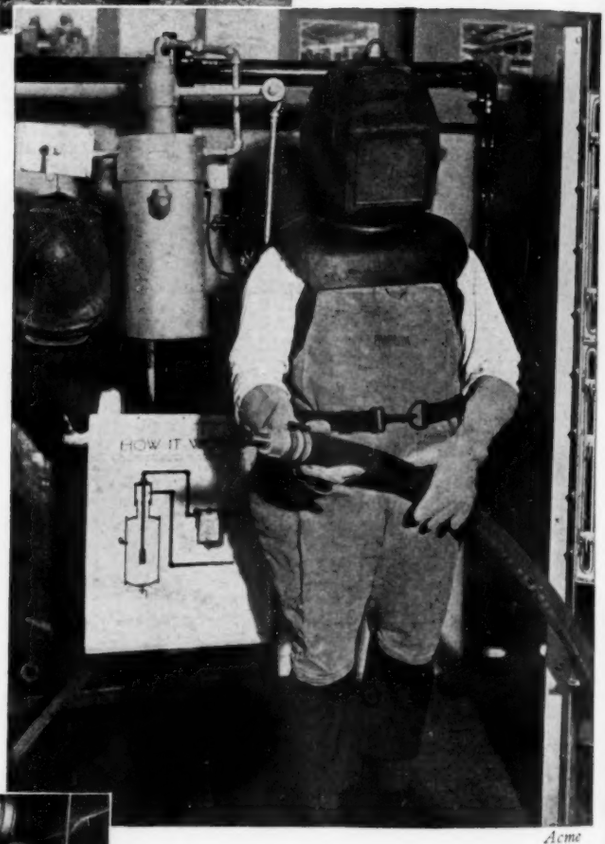
Police of Gravesend, England, have recently been equipped with first aid satchels and cameras. The demonstration pictured shows one officer caring for an emergency patient and another photographing the accident.

Ewing Galloway

Whether or not natives of Yucatan know the healthfulness of honey as a sweet, they use much wild bee honey. Sections of hollow trees in which the bees nest are cut and stacked up until the honey is needed. The bees do not sting.

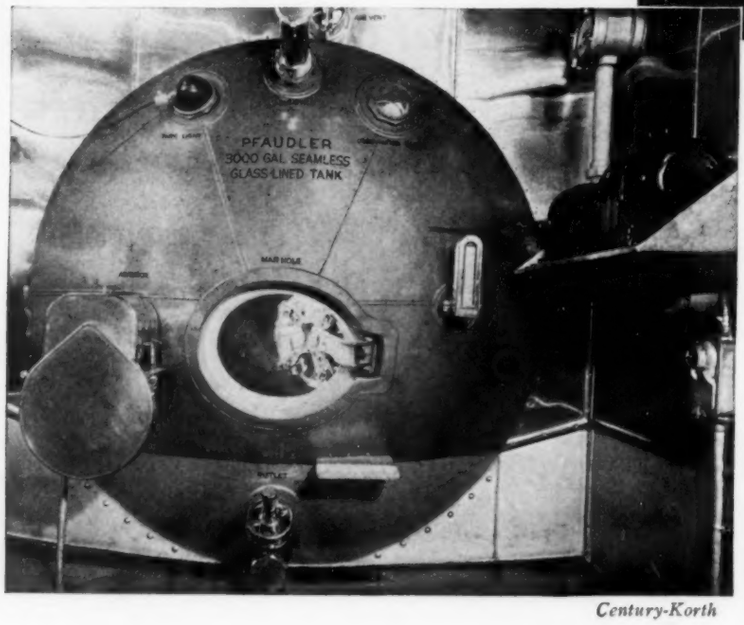
Acme

The school for blind men's dogs in Potsdam recently celebrated the tenth anniversary of its founding. Many reliable dogs have "graduated" from the school and are indispensable companions to their masters.



Acme

Among many new and interesting safety devices is this helmet, which was designed to protect sand blasters. It will reduce the number of injuries to eyes and face and will protect the wearer from silicosis, or grinders' disease.

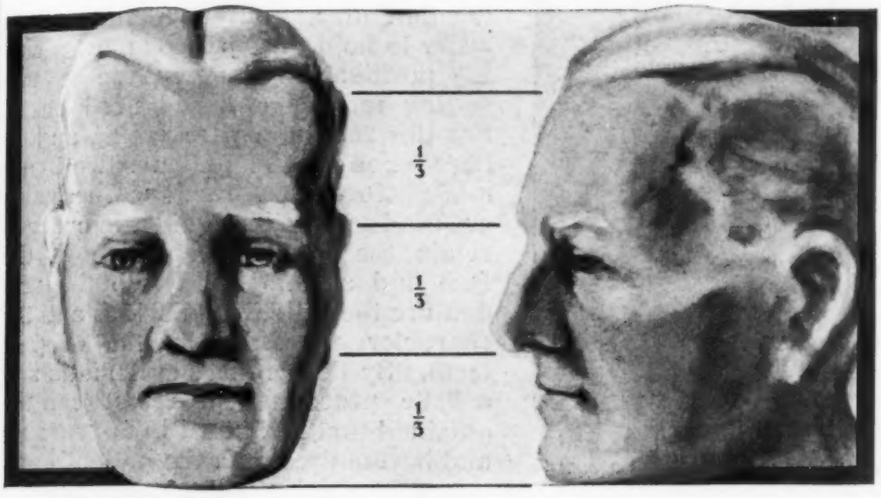


Century-Korth

The picture at the left was taken inside a glass lined tank car looking toward one of the two glass lined milk tanks. This sanitary milk car was displayed at Chicago's Century of Progress exposition.

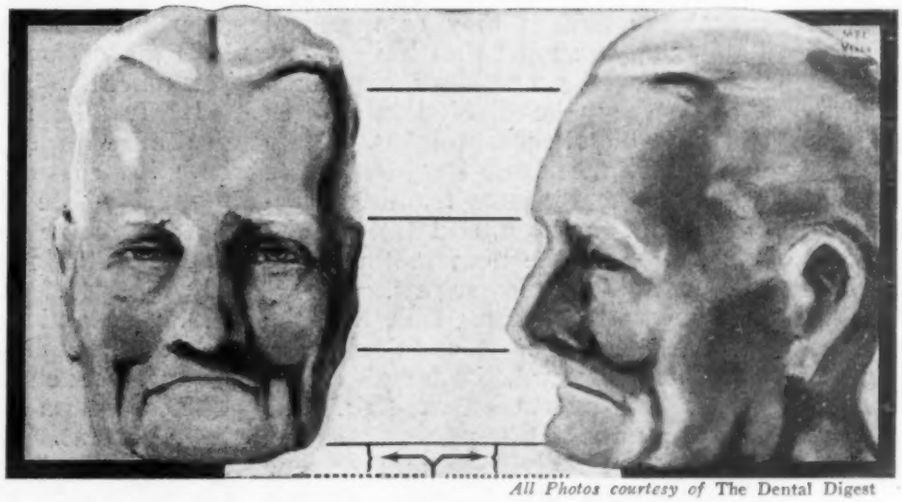
False Faces— False Conceptions— False Teeth

By
M. R. O'LEARY



The face may be divided into three parts, all of nearly equal measurement. The pictures to the left show the normal face.

With removal of the teeth, a change that affects the whole face takes place in the lower third, which is reduced in length by at least one-third.



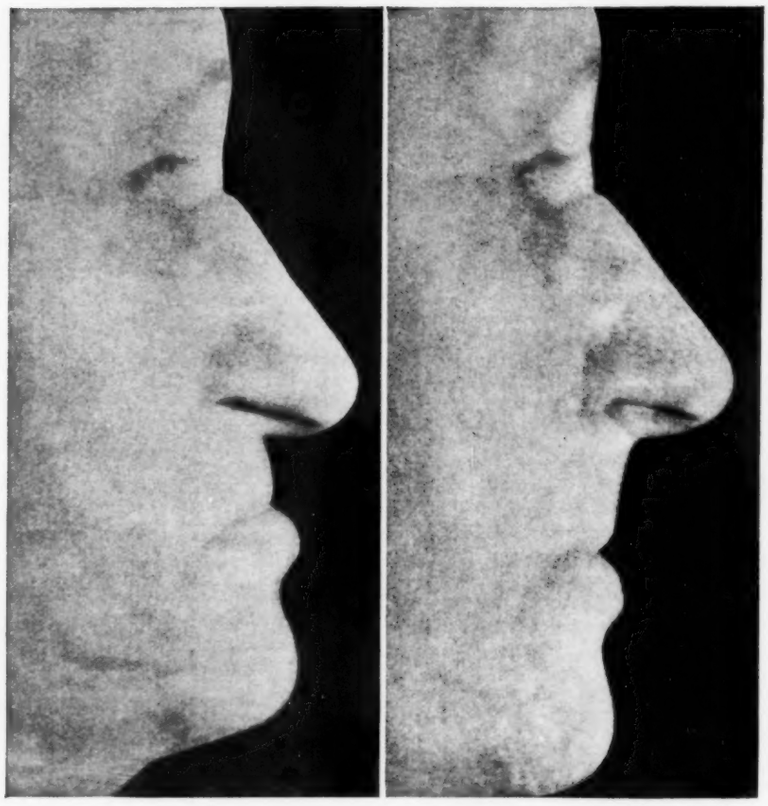
All Photos courtesy of The Dental Digest

THE HEALTH of the child has been stressed from every side, and as a result of present-day enlightenment most parents see to it that their children's diet is correct and that they receive periodic medical and dental examination. Generally the rules of health are followed out religiously, and the results have proved the value of these efforts toward child health.

The sad part is that this interest and enlightenment does not enter adult life with the same vigorous purpose. The dental patient for whom dentures, artificial teeth, must be made, is a good example of this lack of enlightenment on the part of adults. The patient has no idea of what to expect from artificial teeth, of how they function or of the attention and care they require. If the patient realized more intently the need for artificial teeth and what may be expected from them, the results would be more gratifying both to patient and to dentist.

The patient who presents herself to the dentist a short time after the extraction of her teeth realizes that a radical change has been made in her appearance and that the loss of her teeth has made her appear much older. She readily sees that her cheeks have assumed a hollow appearance, that deep lines have formed at the corners of her mouth and that small wrinkles have made their appearance about her lips. The lips themselves have lost their arched contour and have turned inward with a definite flatness.

In all, the face has lost its expression, its symmetrical contour, and the muscles have been robbed of their tonicity. The loss of that vital function of mastication also has exacted its toll and is indirectly reflected in the patient's appearance. The patient can see that she has assumed the false face, the face of old age, that is not her own.



After the teeth are removed, the cheeks appear hollow and the lips sink in. Properly fitting dentures restore the lost shapeliness.

In order that the patient may comprehend what has happened, she must first have a few factors, primarily facial proportions, explained to her. The face may be divided into three parts, all of nearly equal measurement. These parts are (1) the distance from the hair line to the eyebrows; (2) the distance from the eyebrows to the base of the nose, and (3) the distance from the base of the nose to the lower border of the mandible, or lower jaw.

It is in the lower third of the face that the change that affects the whole face takes place. After the teeth are removed, the length of the lower third is reduced by at least one-half. The lower jaw is not retained at its proper distance, and the muscles lose their tone and become flabby, with the result that wrinkles appear. The teeth and their supporting structures, which held the lips and cheeks in their proper position, are now gone, and therefore the cheeks appear hollow and the lips have lost their shapeliness.

The patient generally has a mental picture of how the restoration, or new teeth, will look and how they will function. This mental picture is invariably a false conception of the whole thing.

Usually the patient desires small, even and exceptionally white teeth, her own observation of pretty teeth; but in order to select teeth that are natural in appearance and in harmony with the patient's expression, numerous things must be considered. In general, the dentist must consider the shape of the face, of which there are three basic types, square, ovoid and tapering; the complexion; the color of the eyes and hair, and the patient's age.

The selecting of the proper mold for the teeth and the blending of color to insure harmony of the face are considered exceedingly important by the dentist. He must therefore select the mold most suited in the individual case. The placing of the teeth is also of vital importance. In one patient, for example, the upper centrals may be best when they are set the smallest fraction of a millimeter forward in order to hold the lip in its most pleasing position; in another, the reverse setting may give the desired effect. For this reason, a wire profile and an impression of the patient's teeth are made before the extraction. These aids are used as auxiliary guides in order to retain the proper proportion of the face and also to build into the new denture the little irregularities and the character expressed by the original teeth. By the dentist's systematic and artistic procedure, a result can be obtained that is natural in appearance and harmonizes with the patient's age.

Another false conception is that many patients suppose that on the insertion of their false teeth their troubles will be over. They expect the restoration to be permanent.

It must be remembered that the dentist is dealing with changeable tissue. The human body itself is constantly undergoing change. In mouths where dentures are inserted a short time after the extraction, the dentures can be expected to loosen considerably. In general, 80 per cent of the shrinkage takes place in the first year and a half. The other 20 per cent occurs throughout life. In some patients, of course, the change takes place more slowly. The correction for each percentage of shrinkage is important. Because of the rapidity of the shrinkage in the first year and a half, the patient generally recognizes the need of further dental attention.

Mouths Change, but Dentures Remain Constant

It is possible to remedy conditions after new impressions of the changed mouth have been taken. The dentures have not changed, but the mouth has. The patient who has become accustomed to wearing artificial teeth over a long period of time does not realize that resorption of tissues and bone is also occurring in his mouth, although to a lesser degree. It is therefore important that these patients also receive dental attention in order to prevent destruction of their ridges and to increase the efficiency of the dentures. The patient, unknowingly, is

masticating food with about 10 per cent efficiency when this could be increased 90 per cent by properly reconstructed dentures to suit a changed mouth.

If a person had never seen or driven any other than a 1900 model automobile, he would probably be perfectly contented to continue with it. The same holds true for teeth, often when there is an important need for improvement. The patient who is adeptly manipulating ill fitting dentures does so with consequent loss of function. He also destroys the form of the bony ridge.

Science Cannot Work Miracles

The false conception, however, that arouses the ire of the dentist most of all is the wish of the patient to compare her teeth and her mouth with those of some one else. One cannot compare one's mouth with some other person's mouth any more than one can say that all people are alike or that all diseases can be cured by the same medicine. The crippled mouth exists, as does the crippled body. In each case, science can only do its best; it cannot work miracles.

No two mouths are alike; therefore, the teeth of no two persons can be alike. The ridges vary in form, density, tissue tolerance, position of muscular attachments, size of glands and a great list of other factors. This variation also holds true in regard to the time required for shrinkage. It is utterly impossible to predict the exact amount of shrinkage that will occur in any one mouth. In one mouth, shrinkage may be exceedingly rapid; in another, it may be extremely slow, and often little actual change takes place at all.

To retain diseased teeth too long is not only detrimental to the mouth but also conducive to adverse systemic effects. If the underlying bone becomes infected, a great deal of the ridge may be destroyed. In badly diseased mouths the absorption is, of course, greater than in those not so affected.

Dentists often hear this question, "Doctor, must I wait a year before the insertion of artificial teeth?" It is neither necessary nor beneficial to wait so long. If the dentures are inserted shortly after the extraction, the dentist can preserve to a degree the strength of the muscles of mastication and can also to a degree prevent that retrogressive flabby condition of the facial tissue.

Most patients expect too much from artificial teeth and would compare them with their own natural teeth. They must remember that dentures are man made and constructed of materials of everyday use. They are similar to crutches. Because of a proper mental attitude, or what would be better termed an intelligent attitude, some persons adapt themselves readily to dentures. In other cases in which either the general health or the mouth condition is poor, more time is required for the patients to accustom themselves to using false teeth. There is also a small percentage of patients who will never be able to wear dentures; the chief reason for their failure is their own mental attitude or lack of any degree of perseverance.

It took nature a number of years to form that full complement of teeth whose function was to safeguard health by preparing proper food in an efficient manner. Any one will bear witness to the fact that the forming or developing of these teeth was not without some discomfort, nor were they free from the necessity of dental attention to keep them healthy.

The making of dentures is a scientific problem as well as an artistic creation. In constructing dentures the ethical dentist spends much time in one tedious task, that of overcoming a destruction to the ridges. This task is to obtain a scientific balance of the dentures according to the individual jaw movement. The elevations and depressions of the teeth must be in their proper position at the various angles that it is possible for the moving jaw to assume. This procedure increases the efficiency and also preserves the ridges. Just as an automobile functions more properly when all the cylinders work well, so do teeth function more properly with these fine adjustments that the dentist builds into them. These adjustments must be maintained even though the base or foundation of dentistry is a changeable and movable tissue.

False Teeth, Like Natural Teeth, Require Care

Soon after the insertion of the dentures, the patient must go through a period of discomfort or adjustment. It is that period of time in which the muscles of the mouth, the glands and the tongue must all become adapted to the form of the dentures or the presence of a foreign body in the mouth. At first the patient will experience difficulty in speech, mastication and swallowing. Here nature is usually kind, and with the help of a few adjustments this period of discomfort soon ends, varying in length, of course, with the individual. The patient should not be discouraged if the period seems unusually long.

Just as natural teeth require attention from time to time, so do artificial teeth. There probably existed in the natural teeth cavities of which the patient was unaware until they were shown to him; and functional defects can occur in artificial teeth of which he is likewise unaware. The patient must rely on the experience and skill of the dentist to correct these conditions.

Cooperation is the most important factor the patient can give the dentist. Only when there is cooperation is success assured. Surely the restoration of diseased teeth by satisfactory dentures, often resulting in a restoration of health, is worthy of the best efforts of both patient and dentist.

What Type of Child Needs

By RUTH M. JOHNSON

WITHOUT doubt, all types of children need the nursery school. When parents come to realize that the emotional as well as the physical side of their child's life needs attention and that the social attitudes he acquires while a mere baby may affect him throughout life, I am confident they will be in full sympathy with the aims and purposes of the nursery school.

Tradition being strong in the hearts of most persons, it is difficult often to supplant the idea of any school functioning for any other purpose than the stimulation of mental processes. The nursery school was not designed primarily for the backward child, the problem child, the subnormal or the only child, but for all children who are normally fit, both physically and mentally, to mingle with other small children.

The problem of the director in the nursery school is not to spur the child's mind to a more rapid development but to give him an opportunity to build up proper responses to his environment and playmates. In order that this may be successfully accomplished, a child needs adequate space for unhampered activities, correct and varied materials with which to work, toys of real educational value, and especially children of his own age with whom he may work and play.

Too often Bobby and Betty are the main attraction at home, and they rule accordingly. By refusing to eat breakfast, they create a stir and enjoy quite thoroughly being the cause of the turmoil. In the nursery group they are submerged, and when they refuse to conform to general rules, it is taken for granted that they will be isolated from the other children. Isolation does not bring any consolation. Their little world is getting along nicely without them, and they are not securing coveted attention; quite to the contrary, they are almost forgotten by the other children.

What can the group accomplish for the shy, sensitive child? When I recall how overcome Tommy was the day school opened, with not a single word for any one and with only a wistful glance in the direction of the sand table or toward the block-building group, and when I observe him now, offering his services wherever needed and joyfully participating in all activities, I realize, at least in part, what a change has been wrought in him from his contact in the morning nursery.

Self conscious, fearing that he might not measure up to the others, a condition which often exists when the youngest in a family is constantly trying to compete with older brothers and sisters, he found in the group of children his own age the medium to bring forth his capabilities. There was still another factor which helped Tommy to self confidence. The adults about him in nursery school had time, which most mothers do not possess, to devote an entire morning, if necessary, or many mornings in helping Tommy succeed in his particular project.

Lorraine is quite the opposite of Tommy. Aggressive, filled with self-conscious power, eager to be noticed and always desirous of being a leader, she finds an outlet for her energies in the nursery school. Each trait she possesses is most commendable if it is directed carefully.

In every dramatization, Lorraine wishes to be chosen instantly for the important part, and she immediately shows resentment if some other child is given preference. It is only with the greatest difficulty that she can refrain from actually pushing the other boys and girls into their respective parts. She would like nothing better than to wash and dry all the numerous tiny hands during the lavatory session; to set the table every day for the midmorning lunch; to carry the flag for marching; to lead each song, and in short to be "first" in everything. Abounding in both mental and physical vigor, she needs the group just as keenly as does Tommy.

Here among her playmates she learns that others know how to perform as well as she; that modesty has a place in one's life and that all should have a turn at the coveted task.

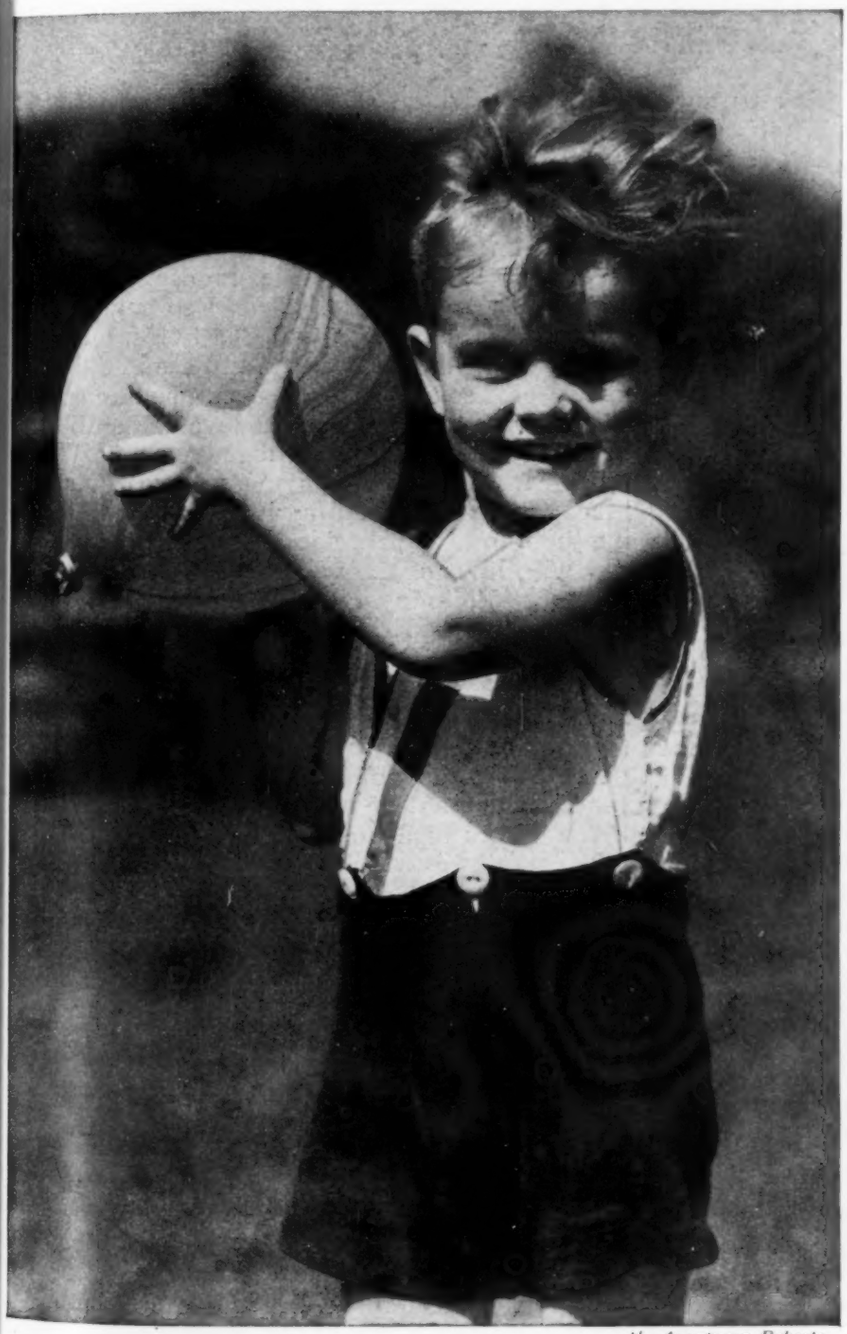
So one of the chief aims in the vocation of a nursery school director is to develop correct social attitudes, which should begin just as early as possible in the young child's life. The physical habit of thumb-sucking, for example, comes under this heading. Any mother who has contended with it will testify how difficult it is to overcome; and the longer the child indulges in it, the more does the persistence increase, just as shyness, boldness, lack of initiative and many other traits gain ground. Unless the child's attitudes are directed early into right channels they may present a lifelong problem.

Jack needs the removal of his tonsils, and even though that incurs considerable expense and effort to the parents, they seldom disregard the advice of the family physician. When the pink slip from the public school comes home lacking

the Nursery School?

its star for perfect dentistry, mother is fairly rushed to the phone to make an appointment, as she should be, so that Patsy's teeth may be reconditioned.

And how mothers of today can discuss vitamins, calories, varied diets, the benefits of cod liver oil, and all matters pertaining to the well being of their offspring! Magazine articles galore by the best authorities instruct all who will read and digest. Much has been written also of the emotional side of the child's life, but there has been such great concern over his physical life that parents either attribute the social side of his nature to heredity or else pray that it may alter in time by itself. It is not uncommon to see a college graduate, strong in body and keen of mind, start out in life seemingly well equipped and yet not prove to be a success in business or elsewhere, simply because he never learned to get along with his fellow beings.



H. Armstrong Roberts

Dear, dainty little Muriel, how best can I describe her? An only child of adoring parents, she lives in a dream world near the border of genius-land. Her powers of observation are extremely keen, and with an intense love of music and all rhythmic activities, she is quite oblivious of others a great portion of the time. I find her often seated with a book, and while turning the pages she is telling an original story in rhyme, apparently to some unseen audience. Could her parents have done a wiser thing in her behalf than to realize her need of direction among children of her own age?

All little children need a few hours away from the home atmosphere daily, just as much as do their elders, who enjoy a like respite. The child goes back with new ideas and a feeling of change which is most stabilizing and wholesome. There should not be any opportunity for a child to become bored in a well regulated morning nursery school, with its various activities and free-time play.

It has been said that "labor is God's education." A little child's play is his labor, and I contend it should be made as joyous as possible.

Then, too, a happy child is usually a healthy child. More than one mother has said to me, "My boy has so many toys and a large amusement room to play in; but he just hangs around me, wondering what to

do all day." This poor child's heart is hungry for play with some other child of his own age. No wonder his toys lack interest. What would be the pleasure of owning a new hat, if there were no one to see it?

Another parent will have a vastly different problem. Her small children will have a superabundance of neighborhood children with whom to mingle, including the usual bully, the mean tease and often the vicious child. Here the child who is physically strongest dominates; resentment soon springs up and is nourished in a timid heart, and many other emotions not desirous are cultivated.

If even one intelligent mother could supervise such play, it would help infinitely; but there again, is it not always the "neighbor's child" who is in the wrong? Therefore it is quite imperative that there is impartial attention and judgment meted out during the playtime of small boys and girls.

There is Buddy, aged 2½, who daily teaches us much self control, for it would be so easy to spoil him utterly! One hundred per cent is his rating in physical, mental and personal make-up. To be in his sunny presence is to love him. It may be asked how such a type can benefit from a nursery school. Should one deprive the exceptional child of normal companionship and all the joys there are to offer in group play?

When Peter is the engineer who blows the whistle and Jimmie the fireman who rings his bell, Buddy is the conductor standing beside the train of little chairs filled with bright-eyed dimpled passengers. "All aboard," he calls and waves his baby arm up and down for the final signal. Away they speed to California to see Bobby's grandmother or maybe to Boston to visit Cynthia's aunt. They wave good-by out of their imaginary windows and wait expectantly for the "sizz, sizz" of the slowing down of the train. Every one goes shopping and buys toys to take home to the children, and then the passengers start back again for the exciting home trip. "What next?" Why then Buddy, hopping about merrily, exclaims," "Let's do it again!" Surely Buddy needs the children and oh, how they need Buddy!

To watch the eager little faces and hands as they wield their paint brushes is truly a delight. Some one exclaims, "I am making Easter eggs!" And needless to add, there follows an epidemic of gay colored eggs, some small, some large, round ones, square ones and occasionally an oval one. Such squeals of joy and mirth are intermingled. Could the interest possibly be so keen with a solitary little figure?

It is so with all the group activities. Peter busies himself at the tool table constructing a boat, but brown-eyed Sue loudly proclaims, "Mine is a bed for dolly," and so competition reigns. We call these two our twins, but they are only neighbors in reality and are as different in appearance and natures as could be imagined. They arrive together, depart together and seem to manage their playtime together in real twin style. If Peter presents me with a bunch of lilacs one morning, telling his mother he is taking them to his "girl friend," Sue comes the next day with lilies of the valley.

Education today is stressing traits of character building. Every one knows that each life is made up of habits desirable or otherwise. Every type of child needs a firm foundation from babyhood up through the years in the forming of happy ways. If any one thinks that personalities do not show at an early stage in the development of a child, let him spend just a few hours in a morning nursery school. He will come away rather enlightened.

I wish I might shout from the housetops one suggestion to all parents, and that is "Take time to visit your children's school!" So much of the child's life is spent in school that it is of paramount value for parents to see and hear what goes on there, thereby gaining first-hand information. And the pleasure the visit gives to the child is inestimable.

One morning not long ago, after Bobby's attractive young mother had spent an hour or so with us, he looked up into my eyes and blurted out, "Oh, wasn't she nice?" All the time she was there he was more than busy drawing her attention to every detail in the nursery, striving to excel in each activity and beaming

with a proud, possessive air. But you see he also wanted our admiration of his sweet mother. Contact with the home and mother is absolutely necessary to produce the best results.

Dr. Johnson said, "One is apt to live for the last half of life on the memory of books read in the first half." Some types of children become interested in books early in life; this is due largely to the fact that either their mother or some member of the family takes time to read aloud to them, from babyhood up into school days. Then again many are not so fortunate; and like all other habits, the friendship of books should be started early. The boy or girl who comes from a home where a radio roars forth most of the day probably sees little of books or hears anything of their contents. What a new delight is theirs when a nursery school director gathers her babies about her on the rug and reads a bit of verse, such as Stevenson's "Land of Counterpane" or "The Friendly Cow."

What rapt attention and happy sighs follow their favorite stories told and retold. "The Pig with the Curly Tail," "The Whimper-Whinnies," "Tinkle-Bell," "The Little Engine That Could" and dozens of others are favorites. "Tell it again, tell it again," greets our ears in an overwhelming refrain.

It is said that the people of nations given to singing are longer lived than those among whom daily singing is not a custom. The world has great need these days, and for all days to come, of happy songs to be blended with work so as to help eliminate the drudgery of routine. The vast majority of children love to join in song until some condition arises to crush the joy; then it becomes a tragedy. Nursery schools stress their music period and rhythmic activities as one of the most desirable outlets for self expression. If the child has a natural aptitude for music, all the greater is the pleasure; and for the child who lacks this advantage at home, there comes a new and thrilling experience.

Day after day, Peter sat in his little chair showing not a particle of interest. Lullabies, Mother Goose songs, songs about the birds, the clock, the apple blossoms and even the train song seemed to lack all appeal. Week after week went by, even orchestra-time with a choice of drum or doll's piano, bells or the triangle made not the slightest difference. And he was the only one! All except Peter grouped about the piano or the gramophone performing gaily.

Then came the day. It was April, and the song was "Pitter-Patter, Pitter-Patter, Raindrops Fall." Never had we seen him even whisper the words of any song before, but at last something had reached way down inside his being. When I asked for a choice, Peter jumped up and cried, "Pitter-Patter." The rapture on his little face was wonderful, and there was no doubt of his pleasure.

During the rest period when we teach the children that rare art of complete relaxation, which every type of child so sorely needs today, I make many observations which are enlightening. After the rugs are placed and each girl and boy is covered with a wee blanket, those luscious yawns begin! Arms lie limp; chubby legs stretch out, and sometimes eyelids droop. Then as the gramophone gives forth some soft and gentle melody, listening takes place and a quiet look of satisfaction appears on the little faces. When the musical gong says "It's time to get up," some are alert and ready to jump; but most of them seem rather loath to arise, and quite often a tiny one declares, "I am tired and want to rest some more!"

"Every one should hear a little music, read a little poetry, and see a fine picture every day of his life," wrote Goethe, and none would deny this truth. We spend much thought on the selections of the pictures for the nursery group and see that they are hung low enough for the preschool runabout. The scenes depict the various activities of youngsters, farm animals, familiar pets, the birds and flowers in natural colors, boats and trains, airplanes and, in short, whatever pertains to children's experiences.

Most pictures in the home, except those found in the baby's own room, are for adults. If the baby's pictures are selected with care and stories are woven around them, their influence may be lasting. We have never yet had a type of child in the nursery who has not loved the pictures on the screens and walls and has not asked over and over again for stories about them.

All types of children need the nursery school. Some come from homes of plenty and some from homes where there is not quite so much. Some lack initiative, self control and perseverance; others abound in kindness, generosity and resourcefulness. The lessons of the home and those of the nursery school are complementary; and frequently the nursery school supplements with gentle force the discipline of the home.

"It isn't love to let him grow
Untutored and untrained,
To see his faults and let them go
Unchecked and unexplained;
For often, that a child may learn,
Love sometimes must seem very stern."

TRAINING FOR

XXI. Health and Your Job

THREE YOUNG MEN had just been graduated from college. Loath to leave the place where they had spent four happy years, they strolled around the campus, taking a last look at favorite buildings and renewing in their minds the happenings of their years at college. Finally their wanderings brought them to the top of College Hill. Here the three lounged on the grass for more than an hour. Although no verbal expression of the thought was made, each man knew that in a few hours the three would be separated permanently.

"So you are determined to take that job with the forestry service, are you, Bill?" asked one of the men.

"Yes, Jack," replied Bill, "I've prepared myself for that type of work, and I love the mountains too well to be contented in a city."

"I wish I could see your point of view, Bill," continued Jack. "But me for the city every time. I love the noise, the bustle, the lights and the jazz. I like to have lots of people around me, people who are accomplishing big things. How about you, Ed? What's your opinion?"

"Well," answered Ed, "my job as a recreational leader will keep me in a city, but somehow, Jack, I'm more interested in my job than I am in the noise of a city. To tell the truth, I hate the noise and smell of a city."

"That's queer," replied Jack. "If I hated a city, I wouldn't live there. Of course, I'm going to like my job in a bond house, and I'm going to make a lot of money, too; and then I can enjoy city life in style."

"Perhaps in twenty years from now you'll have a different opinion, Jack," Bill injected into the conversation.

"No, I don't think I will, but we'll see."

Twenty years later Bill Murray, director of one of the national parks, was sitting on the porch of his cabin home overlooking a blue lake. Seated beside him was Ed Moore, director of recreation for one of the largest cities in the United States. He had arrived that morning to spend a month's vacation with his friend.

"So Jack Compton is really coming up here this afternoon, is he, Bill?" Bill nodded an affirmative answer. "Why, I haven't seen Jack

ATHLETICS AND HEALTH

By ALFRED E. PARKER

since the day we graduated and discussed our future jobs on the top of old College Hill."

"Neither have I, Ed," said Bill, "and to tell the truth, I haven't heard how he has progressed in the bond business."

That afternoon as the two men were again sitting on the porch, a large automobile, driven by a chauffeur, stopped in front of the cabin. A man, quite stooped, was helped from the automobile by the chauffeur, and walked slowly to the steps of the cabin.

"Why, it's Jack," exclaimed Bill and Ed in unison.

Both men, though, were too surprised at the moment to say more. Jack Compton stood before them, but what a changed Jack. His hair was quite gray, his face was furrowed and drawn; there was no mistaking that he was a sick man.

"Yes, it's Jack," were the first words the new arrival said as he seated himself in a rustic chair offered by Bill. "You probably don't recognize me, but I'm Jack, the Jack who twenty years ago thought that a city was the only place in the world worth living in. Well, a city is a good place to live in if you know how to live. Oh, I made money all right, lots of it, but I thought I could 'mock the midnight bell' every night, and I lost my health. I don't mean jazzing around. I soon got tired of that. I got the crazy longing for money, and I worked early and late to make money, money, money. And what good is money, I ask you, without health?"

"Why didn't you take some time off and come up here long before this?" questioned Bill. "You should have known you would be welcome."

"I guess I was just too proud, Bill. I hated to let you know I had made a mess of my life."

"Now see here," interrupted Ed, "you are not completely down and out. You can gain back your health if you make the effort."

"That's what the doc said at the hospital."

"Hospital!" exclaimed Bill, surprised.

"Why, yes. I've been in the hospital for the last six months. You see it was this way. I might as well tell you fellows everything. This crazy desire to be rich seized me after I had been with the bond house about three years. So I set to work to make a lot of money. And how I did work!

"But the more I worked, the more tired I became. I just didn't seem to have a bit of pep. Somehow I kept going until about seven months ago, and then I got to feeling so bad that I had to seek a doctor's advice. Well, he certainly gave me some advice, let me tell you. He talked to me as though I were a young kid in my teens. I resented it then, but now I can see that he was right.

"The very first thing that doctor did was to hand me a health rating chart, and he told me to grade my own health. I believe I have that chart in my pocket now."

Jack paused in his conversation and drew from his pocket a well worn piece of paper which he handed to his friends to examine:

GRADE YOUR OWN HEALTH

(Grade yourself on the basis of 10 per cent for each question)

BE HONEST WITH YOURSELF. BY SO DOING YOU CAN HELP THE DOCTOR TO HELP YOU.

1. Do you exercise every day?
2. Do you get eight hours of sound sleep a night?
3. Can you work and play without undue fatigue?
4. Do you take shower baths every week?
5. Do you drink water every day?
6. Do you eat only at mealtime? (Fruit can be excepted).
7. Do you have a normal bowel movement daily?
8. Are you free from recurring infections?
9. Have you a cheerful attitude toward life, or are you a slave to worry?
10. Have you an understanding and a control of the sex instinct?

"At first," continued Jack, "when I looked at the chart I was sure the doctor considered me a mere kid. But the more I looked at the chart, the more I could see that, in fairness to myself, there were a number of questions on which I could not rate myself 10 per cent. Somehow I knew, too, that I couldn't fool that doctor, and so I gave an honest grade on every question. My total grade was less than 60 per cent. In analyzing my own health habits I found that I was violating about all the right habits of health.

"When the doctor saw my rating, he didn't say much, but he certainly gave me a thorough examination. He took my blood pressure, which he found low; he tested my heart; he examined my teeth, my eyes and my nose, and when he examined my tonsils he let me know that I had the worst case of infected tonsils he had ever seen.

"The result of all the doctor's examining was that I had to go to the hospital. After working with my blood pressure and resting my heart until it was in first class condition, they took out my tonsils. And the day I left the hospital the doctor told me to get away from the city for at least a year. He hinted, too, that I had better learn how to live."

"I'm sorry to hear that you have been ill," said Bill, "but I'm glad you decided to come up here and take in a little of the tonic of the open country and the mountains."

"I suppose," interrupted Ed, "that, after all, this business of choosing the right job, or life work, is probably the biggest problem every man has to solve. In my work as a director of recreation, I continually find men who are in jobs that are injurious to their health.

"Right now my son is at a stage when one day he wants to be a fireman and the next day a railroad engineer. I am sure that my boy will need a lot of guidance and help when he becomes old enough to decide really what his life work is going to be, and a part of that guidance should be in directing him toward a job that will not break down his health."

"You're absolutely right, Ed," commented Jack. "That is what I failed to see back in college. I never was as robust as either of you men, and yet I chose an inside job, a job that hardly ever permitted me to see daylight."

"I am glad you realize that now," returned Ed, "because you are not an old man, and if you take care of yourself you can still find vigorous health. I sometimes think it is too bad that all people cannot work out in the open. But that is impossible. There is a real effort today, though, to make all working conditions healthful.

"A part of my job in the last few years has been to investigate working conditions in modern industry. I have found a high percentage of chronic heart trouble among those who work in foundries, in blacksmith shops and in mines. I have found that rupture was common among men who have to lift heavy burdens.

"My investigations have also proved to me that faulty posture while standing at benches and while sitting at desks causes spinal curvature; that flatfoot results among workmen who have to stand all day; that eye injuries often occur in factories where machinery is not properly protected; that eye-strain results from constant close work; and that dust, such as is found in sand blasting, in granite cutting and in coal mines, is highly injurious to the lung tissues."

"But is anything being done to correct these conditions?" inquired Bill.

"Yes, on the whole," answered Ed, "modern industry is trying to correct such conditions. Workmen's compensation laws have forced employers to stand the expense of the medical care of injured workers. And in addition to these laws, employers have come to realize that a healthy worker is a more efficient worker.

"Because of this new attitude, many industries are establishing medical departments. In some industrial plants several rooms are given over to the medical department, which is conducted by a physician and a staff of nurses. Not only do they treat injuries and illness, but they also give an annual physical examination to check up on each worker's health."

"That's a good plan, Ed," commented Jack. "If I had started doing that years ago, I wouldn't be an invalid today."

"Yes," returned Ed, "the annual physical examination is the only way to keep an accurate check on health. Insurance companies state that there is an 18 per cent reduction in the mortality rate among those who have yearly physical examinations. I have had an examination annually since leaving college. When my son was born, I determined that I would know just what condition his health was in each year, and I am not sorry I have followed out the plan of having a physician check him over.

"But there is another fact about the health of workers in industry. Nearly all the large manufacturing plants today offer an extended recreational program. Some companies have built gymnasiums for their employees. Whether or not this is done, most of the companies schedule volley-ball, baseball, tennis and quoits during the noon hour. In the late afternoon there is a variety of sports, including swimming, tennis and volley-ball.

"Besides an athletic program there are picnics and hikes and trips to municipal camps in the mountains for week-ends and holidays. Every effort possible is being made to give those who work inside a chance to get outdoors whenever it is practicable. Naturally these efforts are not in vain, and the result is that workmen are much healthier."

"You are certainly doing worthwhile work, Ed," said Jack. "I can realize it more now after having gone through what I have."

"Well, it is true in these modern times more than ever before," continued Ed enthusiastically, "that men cannot get far with their jobs unless they have health. In the last two or three years I have had to speak to gatherings of boys a number of times, and that is one point I always emphasize. Repeatedly, I tell these groups of boys that the more ambitious they are, the more they should look after their health. With health, an ambitious boy can go ahead and seek to attain his ambitions; with health, a boy can make more of his job than he can ever hope to otherwise, and with health, work usually becomes play."

Ed could go no further with his conversation, for Bill's wife appeared and announced that supper was ready.

"Supper," exclaimed Jack with a smile. "Gee, I haven't heard the call to supper since I was a kid. In the city the evening meal is always dinner, but up here in the mountains, supper seems to me to be just the right word, and with two or three hours of this pure mountain air in my lungs I believe I can do real justice to a supper."

(To be continued)

THE A B C FAIRIES

By

LOUISE DUNHAM

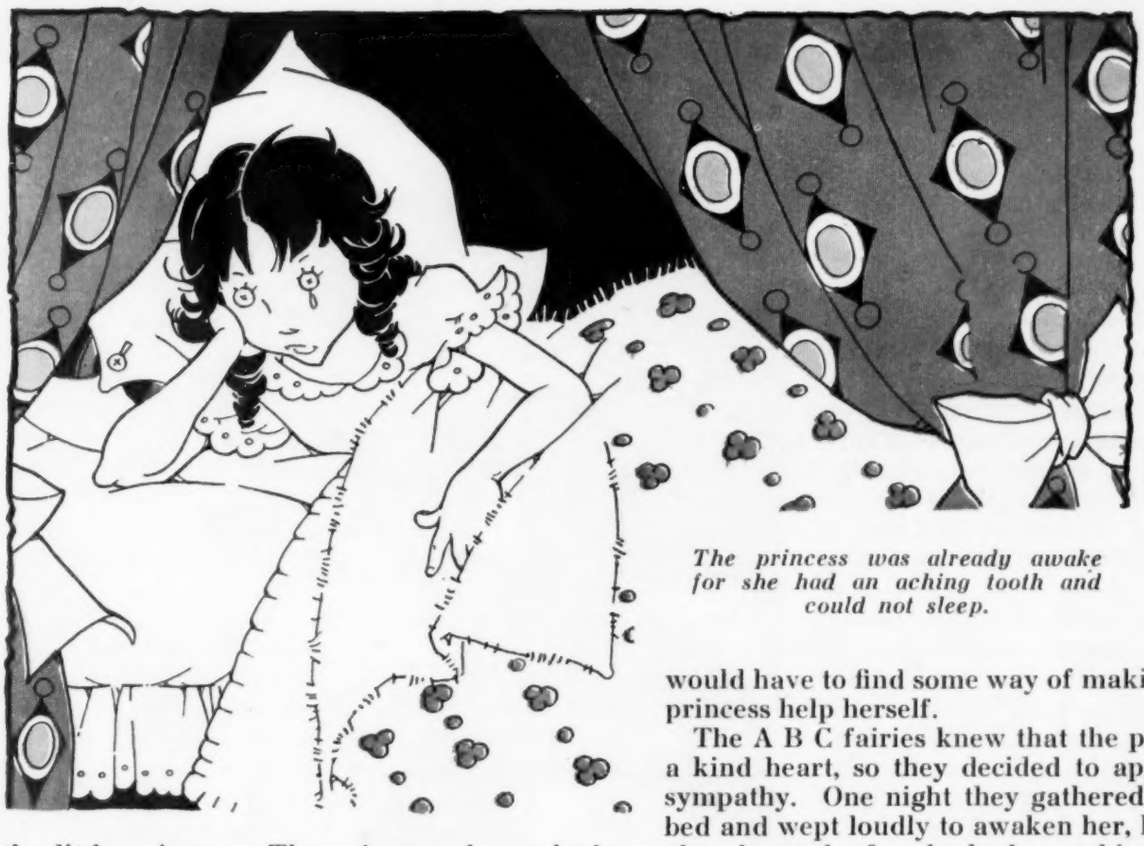
But, temper or tantrum, it was nothing compared with the royal rage with which she swept away her luncheon.

ONCE UPON A TIME there was a beautiful kingdom ruled by a kind king and queen. There was prosperity and peace within the palace, but the king and queen were very lonely. They wished for a daughter, a little princess, to bring joy and happiness to them, and because the queen was the kind of queen who never, never said, "My dear, I weighed only 104 pounds when I was married," and because the king was the kind of king who never told neighboring queens, "She's a good queen but she doesn't understand me," the fairies were kind and sent to them a beautiful little daughter.

There was rejoicing in the kingdom over this blessed event, and for two or three years all was calm and peaceful. But as the little princess grew older, she developed a will of her own and, because the king and queen adored her and could not bear to see her weep, she was never compelled to do anything she did not want to do; consequently, by the time she was 6 years of age there were many things that she did not want to do.

She did not want to drink milk or orange juice. She said that strawberry soda matched her beautiful pink ribbons, so she drank strawberry soda and gave the milk to her cat and played ball with the oranges.

She never ate cereal for breakfast. For that matter, she never ate breakfast. She was never hungry, so she gave her cereal to the dog and ate the last of the chocolates she had taken to bed with her the night before. This did not make her happy. In fact, she was distinctly peevish; and if she had not been a princess, it could have been said that she was indulging in a tantrum. The king and queen murmured something about "temperament," and it was allowed to go at that. But, tantrum or temperament, it was nothing compared with the royal rage with which she swept away her luncheon of spinach, carrots and lamb chop. I don't like to tell this about her, but she jumped up and down and screamed until she was red in the face. The king and queen were much alarmed; and in order to quiet her, they gave her half of their luncheon, which consisted of baked sausages, fried potatoes and coconut cake. The cat and dog got the spinach, carrots and lamb chop, although to this day if you asked the king and queen which ate which, they could not tell you, so busy were they in quieting the little princess. As time went on, they spent much time and energy in keeping the princess happy, for every day she grew more difficult to please. Not only that, but she became ill at times, and the king and queen were much concerned, for they loved the little princess. The king had to neglect his business and stay home to give the princess medicine every half hour, and the queen could not attend to the management of the royal household because she had to spend so much of her time wiping the royal nose of



The princess was already awake for she had an aching tooth and could not sleep.

the little princess. The princess always had a cold, although her cat and dog were unusually healthy.

This state of affairs went on for months and months and might have continued indefinitely, had not the queen noticed that the royal knees of the little princess were not exactly straight. If she had been a common child, people would have said of her, "It's too bad she's so bowlegged," but because she was a princess no one ever referred to it. Secretly it worried the queen, who had to admit in her heart of hearts that the princess actually was bowlegged. She tried to tell herself that the princess could wear a train and that bowlegs did not matter, but being a woman as well as a queen, she knew that they did matter, terribly.

About this time the queen noticed that the complexion of the little princess was gray and pasty, and that her eyes were dull and that her breath—not even a gracious queen and loving mother could overlook such a breath! She told the king about it, and he sniffed and said, "We must do something about this at once. I'll call a conference." He called a conference, and throughout the length and breadth of the kingdom it was made known that great would be the reward to the person who could make the princess well and happy.

Soon this was known to the fairies who had sent the princess to the king and queen, and, because they felt themselves responsible to a certain extent, they decided that they would have to do something about it. They called the A B C fairies to them and told them that they would have to find some way of making the little princess help herself.

The A B C fairies knew that the princess had a kind heart, so they decided to appeal to her sympathy. One night they gathered beside her bed and wept loudly to awaken her, but she was already awake for she had an aching tooth and could not sleep. She asked who they were and why they wept. They told her that they were the A B C fairies and that they wept because they and their brothers and sisters were in prison and could not get out to do the work that was expected of them. She asked where they were imprisoned, and Fairy A told her that she was imprisoned in milk and vegetables and eggs. Fairy B told her that he was imprisoned in cereals and lamb chops, and Fairy C added in a weak little voice that she was imprisoned in oranges and lettuce.

The princess asked how she could help them, and they told her that only by thoroughly chewing and swallowing their prisons could she free them and let them go about their work.

The princess hesitated, and in order to talk herself out of doing something that she did not want to do but felt that she should do, she said, "How do I know you are fairies? Maybe I'm just dreaming you. Once I dreamed a red, white and blue frog playing a piano; and if I could dream that, I can dream three little fairies. I can't help you unless you show yourselves to me, and that's that." She was a very decided little princess.

The fairies explained patiently that they were too tiny to be seen, even with a microscope, and, besides, they were in prison. But they declared that once they were out of prison and free, they had the power to become very beautiful, so beautiful that their beauty would reflect on her and cause her to become the most beautiful princess in the world.

This was something the princess could not resist, so the next morning the king and queen were much surprised to have her come to the breakfast table and ask for a large dish of cereal with milk. They were even more surprised to see her eating her orange instead of playing ball with it; and when, at noon, she ate her lamb chop and spinach and carrots, they looked at each other in amazement. The cat and dog were very sad and hungry, but the king was so pleased that he gave her two nickels for two bottles of strawberry soda instead of the one bottle she usually had. The fairies had warned her that strawberry soda and chocolates were fatal to them and caused them to curl up and die by the hundreds; so although she took the two nickels, she put one in her bank and gave the other to the Red Cross. The fairies had also told her that their prisons must be chewed into tiny bits in order to release the tiniest of the fairies who might happen to be shut into closets or bureau drawers, so for days and weeks and months the princess continued to chew the prisons until after a while she did not mind doing it. She even became fond of oranges and spinach.

One day, alone and unaided, she reasoned that if the fairies had been shut in dark prisons for a long time they must be cold and cramped, so she took them out into the warm sunshine to run and play with her. That was one of the best things she could have done for them and for herself.

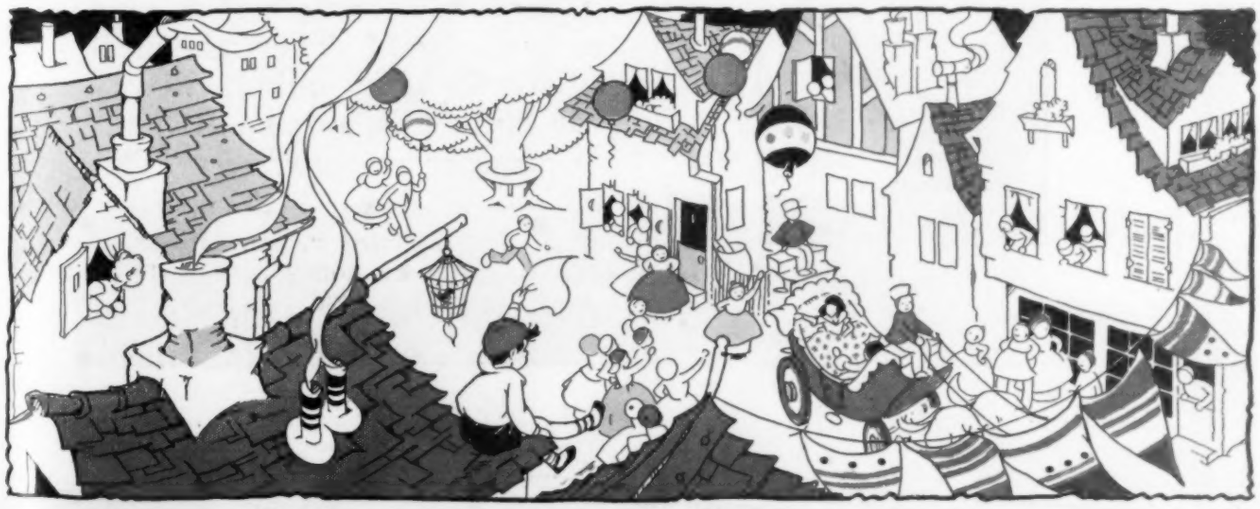
One day the queen noticed her as she ran and played in the garden and said, "I do believe that her legs are practically straight." She called the king, and they decided that it would not be necessary for the princess to wear long skirts at the coronation. There had to be a train, of course, but it could be fastened from the shoulders instead of being a part of the skirt.

As they mused on this seeming miracle they remembered that for months they had not heard a single sniffle from the princess and that the laundry bill had been cut down because the princess did not use so many handkerchiefs. Also she never had toothaches any more. Then they looked at each other and said in one breath, "Do you suppose?" They did not dare to voice their thoughts, but they called the princess to them. The queen sniffed and the king sniffed—small sniffs at first, then deep sniffs. It was true! The princess's bad breath was gone. The king put his arms around the queen, and she laid her head on his shoulder, and they wept tears of joy. When they had dried their eyes sufficiently, they noticed that the eyes of the Princess were clear and bright and that her skin was pink and white and that she was indeed very beautiful.

The king declared a holiday; and as he and the queen and the princess rode in state to the movies, the loyal subjects cheered and waved their hats and said of the princess, "It is as plain as A B C that she is the most beautiful princess in the world. She is so beautiful that she shines." And then the princess knew that the A B C fairies were reflecting their beauty on her, as they had told her they could do if she would help them.

Because she was a good little girl and told her mother everything, the princess told the queen why she was so beautiful; and the queen told the king, and they decided that not only would they, themselves, eat lamb chops and spinach but that they would issue a proclamation to all mothers instructing them to teach their children to eat all foods in which the A B C fairies were imprisoned.

This was done, and in due time the kingdom was famed for its healthy, happy and beautiful subjects; for unless people are healthy they cannot be happy, and unless they are happy they cannot be beautiful. So if any little girl who reads this wants to be healthy, happy and beautiful, she must be kind to the A B C fairies.



The king declared a holiday, and he and the queen and the princess rode in state to the movies.

I Want to Know

A FIRST PHYSIOLOGY

By Oscar Reiss
and
Dorothy Walter Baruch

X

Tasting and Smelling

JEAN had been cooking. She loved to cook. She had just made a new kind of candy, but she didn't know what to name it. She had put all sorts of things into it, but she would not tell any one what these were.

"Guess," she said.

"I taste salt," said John.

Dogs can recognize people by sniffing at them.

John could taste the salt so clearly because accidentally Jean had put in a great deal of it, and salt happens to be one of the kinds of taste we really do taste.

There are taste buds on the tongue, mostly on the back of it. Anything salty or sweet or sour or bitter can be tasted by these buds, which then send messages to the brain. There the messages register in some unknown way so that we say, "This sugar is sweet," or "This vinegar is sour," or "This coffee is bitter."

Sweet and salty and bitter and sour tastes are the only tastes that register through the taste buds. Other tastes register through our smelling them.

The messages about these tastes are sent from nerves in the back of the nose to the brain.

When you say, "I taste onion," you really are smelling it with your nose although you think you are tasting it with your tongue.

Jean had just made a new kind of candy, but she didn't know what to name it.

At times when you have had a cold, you may have noticed that you could not taste things as well as ordinarily. That was because your nose was stopped up and you were not able to smell properly.

Of course you smell things, too, that have nothing especially to do with taste. You may smell delicious perfumes, for instance. Or you may smell the garbage man's wagon, which, as you know, is certainly far from delicious.

Dogs and other animals use their sense of smell much more than people do. We may run away from the garbage wagon, it is true. Or we may try to find out where the good perfume smell comes from so as to get closer to it, but we do not use our noses the way dogs do, for instance, to locate the bones that they bury in the ground or to recognize one person from another by sniffing about at them.

"My dog does that," exclaimed Jean, "He dashes up and sniffs and sniffs; and if you're a stranger, he walks away and lies down or he barks at you hard. But if he knows you, why then he jumps around you for joy and wags and wags his tail."

Jean, John and Jerry will appear again in the next issue of HYGEIA. On completion of the serial, "I Want to Know" will be published in book form by Harper and Brothers.

TO MARKET, TO MARKET

For Vegetables and Fruits

Notice the native fruits of Havana, Cuba, in the picture below.

J. Jay Hirz

A major industry has developed in Southern California from roadside markets such as the one pictured above. What a shopping center for fruits and vegetables!

William Thompson

William Thompson

A Chinese fruit vender with his portable market is ready for business on the streets of Hongkong.

William Thompson

Natives of Java come daily to the fruit and vegetable market.

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

WANTED: An Original Teacher

"WHAT SORT of teacher are you seeking?" asked President Smith of the Teacher's College as he glanced rapidly at a sheaf of memoranda.

"I want to find a teacher for the fifth grade of the Hillside School who has what is ordinarily regarded as the qualifications of a good teacher," said Principal Brown. "I expect to find somebody of excellent character, abounding physical vigor, pleasing personality, sound scholarship and good training. There is one qualification on which I must insist. The boys and girls at Hillside are a live bunch of youngsters. We need a young woman who is resourceful and original."

Through such a statement the principal identified himself with the modern trend of education. It was not always that an original teacher was in demand. There was a time, in the memory of those who attended the old-fashioned schools, when education was largely static. The teacher entering the profession was expected to follow well beaten paths. In arithmetic the children recited their tables in singsong fashion. In history long lists of dates had to be committed to memory. In their reading lessons, children were always admonished to let their voices fall at periods. The course in physiology required two conspicuous achievements: pointing out on a chart the bones of the body and naming them one by one and also tracing on another chart the route of a drop of blood starting with the right auricle. The teacher of that day had two chief problems: to maintain order and to see that the children committed to memory the facts given. Discipline was kept through well defined rewards and punishments.

What a change has taken place. The old school tried to repress activity. The modern school attempts to direct it in such a way that it may have educational value. It is easy to see that Principal Brown had the modern point of view. The teacher for whom he was looking will not repress the activity of her pupils. She will guide them in wholesome activities. There will be no chance for misbehavior.

What resourcefulness and originality are required in teaching health! There was a time in the good old days when teaching was easy. Teacher and pupils followed the book slavishly. Sometimes if the teacher had a weak memory she even looked on the book while the children were reciting. Today the teacher's job is harder but much more exciting and satisfying. It is her business to see that pupils live health. This is a more difficult problem. The schoolroom is regarded as a society in which the teacher and children learn to live together. They study their needs and plan definite action. For example, the children will need sanitary drinking water. This will necessitate the study of the school supply. Does it come from a community water supply? What does the community do to insure freedom from infection? Does the school water supply come from a well? What is the danger from wells? May well water be tested? Where? How much will it cost? What care may be taken of the well to help keep it safe from infection? Why is the common drinking cup a menace to health? What is the value of water to the body? How much water does one need to drink daily? The answers to these questions may be obtained from such sources as books, magazines, government bulletins and personal interviews.

Cleanliness is another need. Textbooks on health tell us that hands should be washed before eating, but most schools still disregard this suggestion as far as the school lunch is concerned. But many clever teachers have been resourceful in making such handwashing possible under sanitary conditions even in a limited school time.

The teacher must have originality in realizing all the situations in the school involving health needs; and she must then bring influences to bear on the children so that they will have insight and a desire to do something and will finally practice good health habits.

In no field of education has there been more evidence of originality than in health teaching. Originality is rapidly making health education one of the most interesting activities in the curriculum.

Our special contributors to this department this month are particularly helpful in telling us about the health situations and materials through which children may learn. Dr. Ruth Strang, a well known psychologist and student of childhood of Teachers College, Columbia University, presents clearly and briefly the principles involved in the learning process, while Fleta McWhorter, supervisor of health education, Jefferson County health department, Birmingham, Ala., and Mildred English, assistant superintendent of schools, Raleigh, N. C., describe numerous concrete situ-

Progression in knowledge occurs in teaching food habits when the child in the primary grades learns which foods to eat.

ations and materials through which children may learn to be healthy and happy.

Many persons believe that originality is something inborn, that one either has it or does not have it, and that it cannot be developed. Probably there is a good deal of truth in this. However, it is my conviction, based on experience, that within certain limits every one can develop originality. One way is to adopt a critical and experimental attitude toward one's problems. Are my aims satisfactory? What am I doing? Why am I doing it like that? Am I satisfied with the result? How can I get better results and in a better way? What experiment shall I try? To adopt such a point of view is bound to stimulate creative teaching.

SOLVING HEALTH EDUCATIONAL PROBLEMS

Health Situations and Materials Through Which Children Learn

PSYCHOLOGY IN CHOOSING HEALTH SITUATIONS AND MATERIALS

RUTH STRANG
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IN ANY educational situation three factors, desire, insight and practice, are essential to effective learning. The learner must desire to acquire the habits or knowledge in question. He must understand, as far as his level of comprehension permits, how and why the proposed course of action will bring the desired results. He must repeat the process as often as necessary in order to secure mastery. These conditions underlying efficient learning are not three distinct steps. They are woven together in behavior. By considering them separately, however, we can subject health education situations and materials to a more critical analysis than would otherwise be possible.

There has been a tendency on the part of some health educators to emphasize one of these factors and neglect the others. One group of leaders, for example, focuses its attention on purpose. These educators maintain that the child must be motivated and that health material must be made interesting. A second group neglects purpose and practice in the pursuit of facts and maintains that the child must be instructed. Health material, for this group, becomes a body of subject matter. Knowledge is assumed to be power. A third group emphasizes practice, and according to this group the child learns by doing. Under this system health material consists of a relentless reiteration of habits.

After these extreme and exclusive points of view have had their day, a middle-of-the-road policy emerges in which each of the three important factors receives due weight. The progressive health educator seeks health situations and materials in which desire, insight and practice each contributes its share to the building of healthy children.

Desire or purpose does not suddenly descend from heaven. It arises out of advancing activity. It is an incomplete reaction, a drive to fulfilment. Child activity, accordingly, is the very stuff out of which desire and purpose grow. It becomes obvious that health situations cannot be distinctly differentiated from life situations. As far as desire and purpose are concerned, the ideal health situations are those which create a demand for healthful living. Thus a situation in which colds are prevalent may evoke, under skilful leadership, a wholehearted desire to decrease the number of colds. A school in which there is a normal boy and girl relationship arouses the desire, on the part of boys and girls, to look their best and to maintain a high level of "pep" and vitality. Once such desires are present, ways and means of attaining the wished-for ends will be sought. If healthful living is an avenue to desired individual and social goals, the pupils will discuss and follow pathways to health.

In carrying forward such an activity, knowledge is needed as a guide and also as a further incentive when the initial desire becomes less portentous. Informational health materials should, accordingly, be of two main types: those which describe what to do and those which explain the reasons for the behavior. In addition, there should be background material, which is needed in order fully to comprehend the reasons.

These types of information may be illustrated by examples of two fundamental health habits; namely, washing hands and eating the right kind and amount of food. Health material about washing the hands should include demonstrations or directions for washing the hands hygienically under various conditions as well as reasons for cleanliness appropriate to the mental ability and interests of the child. Insight into the handwashing process would eventually include the essential background of scientific knowledge of bacteria and their action.

Progression in knowledge occurs in teaching food habits when the child in the primary grades learns which foods to eat for breakfast and other meals; when he becomes cognizant in the intermediate grades of the effect of familiar foods on the growth and health of animals and children, and when, in the upper elementary or junior high school grades, he begins the fascinating study of calories and each of the essential food elements. This new approach may well be reserved to the upper grades when food habits need reenforcement by vivid and heretofore unexplored areas of knowledge. It seems unsound and superficial to introduce scientific explanations before the child has sufficient scientific background to grasp them fully. Would it not be better to develop reasons on the level of the child's everyday experience, rather than to take the edge off his interest in an area of knowledge which could later be attacked intensively with untarnished enthusiasm?

Health knowledge is most meaningful when it is sought in the process of solving some problem. The ability to use health facts in making wise choices in everyday living likewise depends on the use of information in connection with the answering of questions or the solution of problems. Knowledge, therefore, should be acquired in connection with real or accurately described natural situations.

Desire and insight are the prelude to practice. An old English verse expresses quaintly the relationship of knowing and doing:

> He who reads and reads
> And does not what he knows,
> Is he who ploughs and ploughs
> And never sows.

Evidence from the psychologic laboratory has shown that animals that were subjected to electric shocks but were prevented from making any muscular response by paralyzing certain nerves did not learn to fear the shock situation as did normal animals. Reaction was necessary to learning, but extensive laboratory experimentation by Thorndike and his associates indicates that practice alone will not insure learning. Elements of satisfaction and insight seem essential.

Another characteristic of successful practice is specificity. Numerous experiments in learning emphasize the fact that the individual learns what he practices. It is unlikely that health material will influence a child's program of healthful living unless application is made specifically to his daily activities.

WHAT ARE THE HEALTH SITUATIONS AND MATERIALS THROUGH WHICH CHILDREN LEARN?

FLETA McWHORTER
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WHEN WE analyze the school day to find what may be termed health situations, we realize that most situations have health aspects to the teacher who is health-conscious. These situations fall roughly into two groups, those through which habits may be established and those through which insights and knowledges may be gained.

Those situations through which habits may be established are found in the daily routine of living in the school environment and do not of necessity demand consideration in classroom instruction. For that reason they are more likely to be neglected unless the teacher recognizes the responsibility of the school for making possible the practice of habits of right living for the children during the school day and is alert to see that such habits are established or maintained.

Numerous examples of these situations are to be found in the general housekeeping and routine procedures of the school day. The children should be allowed and helped to participate intelligently in such procedures. Watching room temperature, properly regulating ventilation and light, sitting so that light is correct and posture is good may all become educational experiences. Through general housekeeping an appreciation of, and desire for, cleanliness and orderliness may be cultivated. There should be no question as to careful routine procedures such as handwashing, drinking water, proper care of wraps and attending the toilet. The school lunch opens up a vast field in foods, the handling of foods and eating habits. Weather conditions and work in school and on the playground afford opportunity for the discussion of appropriate clothing for various occasions, the removing of wraps indoors and putting them on when needed outdoors. The study and correction of inadequate school facilities should be an opportunity for health teaching.

Situations through which insights and knowledges may be gained arise frequently in connection with instruction or investigation in the social studies; in elementary science, including nature study, and at special or incidental times.

In the social studies, a unit on home and family life may bring out the responsibilities of various members of the family for the health and happiness of the group; a unit on farm life may recognize the contribution of various home or farm products to health and well being; a study of transportation will include the growing need for transportation of foods, improved methods of transportation with reasons for such improvement and the significance of all this to public health. A study of community life cannot fail to consider civic responsibilities and regulations for the protection of the public health. Community industries will make contributions from at least two angles, that of safeguarding the product and that of safeguarding the workers. The lives of peoples of various times and places show that even primitive society has definite health needs and that growing complexities of life bring problems of increasing difficulty and community responsibilities which necessitate community control. Geographic conditions bring varied problems as to food, clothing and shelter, the discussion of which should include effects on general well being. Personal and local application should be made in all these studies.

In elementary science, investigations and experiments may be carried on in such fields as ventilation, sanitation, water and nutrition. Study in one field usually leads into many other fields. The study of bacteria, for instance, opens endless possibilities in foods. One of these is the milk supply. This may be approached from the public health point of view through the study of bacterial count, pasteurization, refrigeration, tuberculin testing, food inspection and local regulations; or the physiologic aspect may be developed on the subjects of milk in the body, food needs of the body and the processes of digestion and assimiliation. Nature study offers many leads into processes of the biologic world with which boys and girls should be given intelligently directed contact so that they may gain wholesome attitudes toward these processes and an understanding of their underlying principles.

Many special or incidental occasions should become educational experiences for the children; these include the program of weighing and measuring; any program of school health services bringing contacts with nurse, doctor or dentist; special inspections by the teacher; cases of illness among the pupils or in the community, and injuries requiring first aid. Little children are naturally curious and are interested in these things; they are greatly impressed by what they see done for the child who is suffering and are pleased to be allowed to discuss it later.

Most of the materials for health instruction exist within the situation itself, being essentially the materials used in carrying on the activity in question or in correct daily living in the school. There are, of course, definite health materials in many of the special activities, such as scales and measuring rods, materials used in making inspection, and first aid supplies. Examples of the materials used in right daily living would be school equipment for handwashing, drinking, housecleaning and the serving of lunches.

Textbooks on health and science and some other reference materials, including easy and interesting read-

Regulating ventilation and light, sitting so that light is correct and posture is good may all become educational experiences.

ing for younger children, are always necessary for instruction and reference when the more specific scientific facts are needed to give background by which children may understand and interpret health implications in situations.

In the social studies, through which much of the health teaching is carried on, the materials are largely those from the field of industrial arts. For instance in handling and studying raw materials or their products, such as foods, fabrics or textiles for clothing and shelter, utensils and tools, the child should gain a more intelligent understanding of differences, reasons for differences, regional and seasonal uses, and aspects which affect the health and well being of people.

Vicarious experiences may be had through pictures or reading materials when first-hand contacts are impossible. The child may be helped to see and to understand much more clearly, however, the how and why of safeguarding a food product, or the safeguarding of workers from accident and health hazards through the actual experience of visiting plants or factories.

The proper use and adaptation of the school environment, and the daily situations within it, are the richest sources of health learning for children. The greatest need is for teachers with adequate preparation in the biologic and social sciences that they may intelligently and effectively make use of the situations which occur in the school environment to secure the understanding and the application of the principles of healthful living on the part of their pupils.

CONCRETE SITUATIONS AND MATERIALS FOR TEACHING HEALTH

MILDRED ENGLISH
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THE CHILD'S health is affected not by what he knows but by what he does. In group living in the classroom many activities may be carried on that will give children opportunities to practice good health and to set up standards of sanitation and cleanliness. Through such activities and experiences they meet health problems in real situations that should approach life conditions outside of school. Principles and facts learned in relation to need and to real problems are more likely to function than those taught as separate entities, apart from the activities of the children.

First grade children often build a playhouse and play at housekeeping. The importance of light and air takes on new meaning when the youngsters face the problem of making windows in their house. Dramatic play in a house of their own making gives opportunity for solving problems of cleanliness, sanitation and ventilation. The responsibility of each member of the group, or the family, for making the home a happy place in which to live takes on real significance, for in the playhouse the child has a part to play, a share in carrying on the work, which he often does not have at home.

One such group, in planning a dinner for "father" when he came home from work, discussed the food needed by the working man as compared with food needed by growing boys and girls. With their teacher they made a trip to the city market to select vegetables for the dinner. They saw there the measures taken to provide the proper care of food and had much pleasure in selecting choice foods.

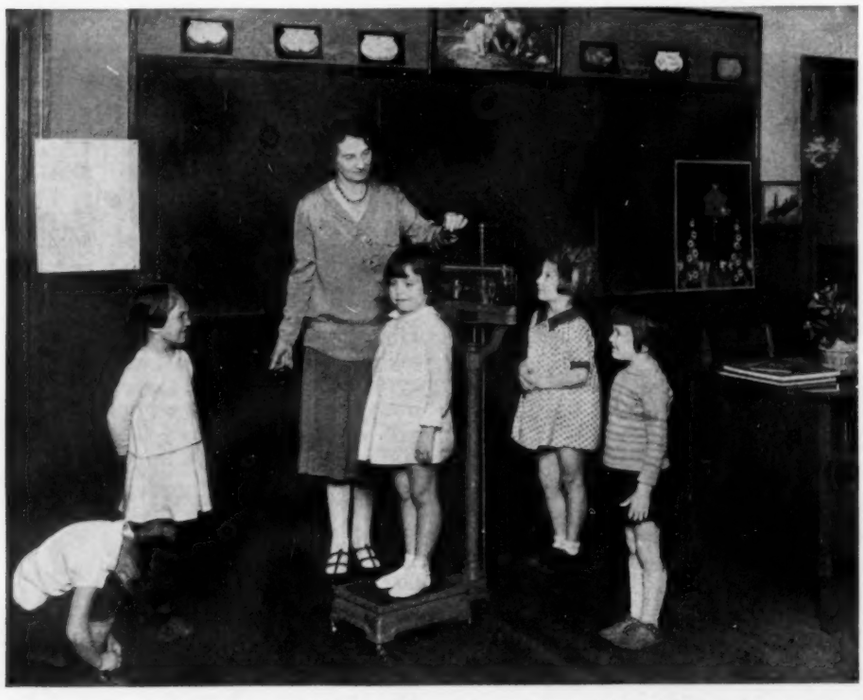
Taking their purchases back to school, they prepared the food in the school kitchen and served it in their playhouse. This social situation gave an opportunity to stress the importance of forming the habits of conversing pleasantly while eating, of courtesy at the table, of eating slowly, of washing the hands before eating and of rest after eating.

Brushing the teeth, sleeping with fresh air in the room, drinking milk and water, and eating fruit were accepted and normal activities of the play home.

In caring for the goldfish the group learned from experience that food is essential to life, when neglect caused the death of their pets. In like manner they learned that plants do not survive without air, sunshine and water, which are essential to life. Such experiences add real meaning to daily living.

A "Circus Unit" carried on by a first grade proved rich in opportunities to teach healthy living. The group constructed a tent, practiced stunts and gave a play circus for interested parents and friends. The stunts afforded opportunity for exercise during winter months when the weather would not permit the use of the playground. In studying the life of the animals and of the circus people, the group developed a new respect for the value of good care of animals and the need of the performers for proper diet, sleep and clean habits in order that they may keep physically fit to do their work. A comparison was made of the health habits of circus people and animals with those of the children. They blew up balloons for their play circus and learned that lungs are like balloons. With fresh air they are healthy; without fresh air they collapse and are unhealthy.

A "Play City" is a unit of work frequently chosen for second or third grades. In such a unit the children come to know the agencies that contribute to health and well being. They also learn to appreciate the responsibility of the city and the state government to protect the health of the citizens, and they realize that the city and the state can do some things for the welfare of the group that the individual cannot do for himself. A city must be kept clean. Therefore the children plan a truck to go through their city daily to collect the trash. Other activities of the city become essential features of daily living in the play city.



Many special or incidental occasions, such as the program of weighing and measuring, should become educational experiences for children.

Later in the grades in which children take up civics and state history, they add further meaning to these facts and realize the responsibility of every citizen for cooperating with the local and state health departments. They can now realize the need for taxation and the value received by every citizen for public money invested. A survey of the city for the agencies that have to do with protecting the health of the citizens and a study of their activities, together with visits to the city, county or state health departments, will give information that is more meaningful than a study of the work of these agencies from the textbook.

In the middle grades, children beginning the study of history may approach it through a unit on "Pioneer and Colonial Life." Health facts and principles arising in such a unit will include the following information: The early settlers had much sickness, and many deaths were caused by improper food, privation and exposure to weather; spread of disease was due to lack of isolation of the sick; food and water are essential to life and growth; efficient living is dependent on the knowledge of the principles of health and sanitation. Such facts, learned in relation to the problems faced by the founders of our nation, become vital ones to the boys and girls and help them understand the progress made in the field of public health work and the vital part such progress has played in the development of our nation.

A study of "The Builders of Our Nation" will include those who have made outstanding contributions in controlling communicable diseases, in public health, in nursing, and so on. This will present challenging problems in the field of health and public welfare and show how states and nations are today striving to solve the vital problems affecting public health and welfare.

"Indian Life" is an interesting unit for children of any age. In this unit, children will learn that the Indians obtained plenty of fresh air and exercise in outdoor life. They ran, swam and hunted. They ate wholesome food and drank water and milk. They had strong white teeth because of eating coarse food. They ate many vegetables as well as meat and fish.

No longer are the differences and queer customs stressed in studies of "Children of Other Lands," but children learn that climate affects the dress, homes, clothing and food of the people in these countries. They learn that the Dutch are a clean, healthy and efficient race, which adds meaning to the concept that efficient living is dependent on the knowledge of the principles of health and sanitation.

P. and A. Photo

Indians obtained plenty of fresh air and outdoor exercise. They ate wholesome food such as vegetables, meat and fish.

Children often plan, construct or arrange a classroom library. This necessitates attention to the proper placing of the tables and chairs so that the light may be right for reading. Care of the eyes, the need for clean hands and clean books, a quiet atmosphere if the children using the library are to enjoy it, and putting books back in place give meaning to the principle that good habits bring happiness in daily living.

Such activities, contact with living, growing things, with fish in the aquarium or with plants, and other experiences that deal with problems affecting daily life, furnish many excellent opportunities for establishing good habits and developing meanings and understandings which serve the child now and which should carry with him through life. A stimulating atmosphere for work and a satisfaction in accomplishment make children happy and more contented.

To Contributors:—*Although most of the articles in the column "Solving Health Educational Problems" are solicited, the editor of this department will be glad to consider contributions which deal with concrete and practical health education procedure in the school. Articles must not exceed 1,000 words.*

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Kansas City Public Schools: Health in the Curriculum. Price, 50 cents. Pp. 160. Curriculum Bulletin No. 11. Kansas City, Mo.: Kansas City Public Schools, 1933.

"Shows the inseparability of health and other activities of the classroom situations." "Reveals the possibilities which daily school procedures offer for healthful practices."

Lamkin, Nina B.: Education for Healthful Living in the Public Schools of Bellevue-Yorkville. Price, 50 cents. Pp. 58. New York: Bellevue-Yorkville Health Demonstration, 1927-31.

Thornburgh, W. B.: Getting Clean at the Seaford School. *The Nation's Schools*, Vol. XI, No. 1. Price, back copies, 50 cents. Pp. 33-38. Chicago: Nation's Schools Publishing Company, January, 1933.

Stresses the importance of learning through experience.

Turner, Clair E.: Principles of Health Education. Price, $2. Pp. 317. Boston: D. C. Heath & Co., 1932.

Chapter VIII deals with health education through cooperative activities. *(Continued on page 573)*

New Books on Health

KEEPING CAMPERS FIT

By Eléna E. Williams. Cloth. Price, $2.50. Pp. 227, with 7 illustrations. New York: E. P. Dutton & Co., Inc., 1934.

THE AUTHOR of this volume is a nurse who has had practical experience in girls' camps throughout the United States. There are about 8,000 summer camps in this country. Parents entrust their children frequently to such camps without making any inquiry as to the provisions that are made for a child in case of illness, without any attempt to study the sanitation and hygiene of the camp and without any realization of the fact not only that there may be no one in the camp who has any conception of disease but that the camp may be many miles away from competent medical care.

Probably one of the wisest statements in this book is the suggestion made in the preface that in every instance of any seriousness when it is necessary for a nurse or other agent to give medical assistance the first rule is: Call a doctor.

In this booklet the author provides complete plans for the organization of the infirmary in a camp, a list of medical equipment, including remedies used in first aid, some consideration of diet and a list of the various types of minor ailments that are likely to occur, together with the types of treatment that may be offered under a nurse's direction. She also discusses the possibilities of teaching health education in a camp and the means used for the prevention of disease.

If there is any particular criticism to be made of the book, it is against the inclusion of a number of useless medical preparations and of far too large a materia medica for the medicine chest.

MORRIS FISHBEIN, M.D.

NEW PATTERNS IN SEX TEACHING

By Frances B. Strain. Cloth. Price, $2. Pp. 242. New York: D. Appleton-Century Company, 1934.

IN THE FLOOD of literature on the teaching of sex that has become available in recent years, all sorts of books have been published. The author of this booklet has assembled the questions usually asked by children and has answered them according to the points of view of modern psychology. The book is interesting because it is full of examples of situations that have actually occurred. It is written for parents and not for the children themselves. It is full of helpful advice, but altogether it gives the impression of making a great deal too much out of what ought to be a fairly simple matter. M. F.

YOU MUST RELAX

By Edmund Jacobson. Cloth. Price, $1.50. Pp. 201. New York: McGraw-Hill Book Company, Inc., 1934.

"YOU MUST RELAX" has been the dictum of the modern physician to the harried business man, the fluttering society woman, and the hectic youth of America in countless thousands of instances. Dr. Jacobson not only says, "You must relax," but he tells how to do it. This little book for the patient is the outgrowth of Dr. Jacobson's work, "Progressive Relaxation," published in 1929 for the medical profession and containing a summary of knowledge on muscle tone and nerve tension, plus a large amount of original research work done by the author, and clinical observation. Dr. Jacobson holds that in many instances where demonstrable organic disease is sought in vain, common and annoying symptoms of the so-called "nervous" type may be much improved by definite efforts at muscular relaxation, in the train of which follow nervous relaxation and amelioration of distressing complaints that harass the strenuous modern American with increasing frequency. This is no royal road to health, and the principle of relaxation is not universally applicable, particularly where there is organic disease, although it may contribute to improvement even under such conditions. It needs to be taught to the patient by a physician who understands it.

Unlike the bizarre theories that depend on mental suggestion and promulgation of the idea that disease and pain do not exist, Dr. Jacobson's prescription of relaxation scrupulously avoids any suggestion to the patient as to what he may expect, simply teaching him to relax and letting him observe for himself what the outcome will be. Already the book is listed as a best seller among works of nonfiction. Therein lies at one and the same time a great advantage and a great danger. The advantage is that relaxation will be presented in attractive terms as a desirable approach to the solution of problems created by our complex civilization; the danger is that because it takes time and patience the method will be discredited by those who jump feverishly from one theory to another in search of a panacea, giving it only superficial trial instead of the intensive application that it demands. W. W. BAUER, M.D.

[NOTE.—Books reviewed or mentioned on this page, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

THE SPAN OF LIFE

By Franklin R. Nuzum. Price, $2. Pp. 108. Springfield, Ill.: Charles C. Thomas, Publisher, 1933.

THIS BOOK is a summary of a series of informal talks given to lay audiences as part of a community program of adult health education carried out by the Santa Barbara (Calif.) Cottage Hospital. The book presents in clear, concise form a description of the heart, its muscles, valves, blood supply and its functioning, including a much simplified and easily understandable explanation of an instrument that has greatly mystified many nonmedical persons; namely, the electrocardiograph. Following the discussion of heart disease is a similarly brief and clear discussion of the structure and function of the kidneys and various types of kidney disease.

The material is well organized and clearly and interestingly presented. The subject matter is approached from the point of view of extending the span of human life, and the author has been properly conservative in pointing out: "From what we already know of blood vessel changes, kidney disease and heart disease, something may be done in the way of prevention. Even though one of these conditions has already established itself in an individual, his period of useful existence may be prolonged."

W. W. B.

QUESTIONS AND ANSWERS

Heredity, Overgrowth, Metabolism

To the Editor:—Do you recommend basal metabolism tests for children as young as 8 years; and if so, can treatment be given for glandular disorders at that age if the test shows that there is such a disorder? I have a daughter who will be 8 this month. She is 57½ inches tall and weighs 98 pounds. As a baby she was of normal height and normal size, weighing nearly 8 pounds at birth. Lately she has been increasing in weight and height with great speed. This factor has already played a part in her life, and if she has glandular trouble I should like to have it corrected before she becomes abnormally large, as it could become a tragedy to a girl. Members of my family are of average size; many members of it are even below average. Members of my husband's family are larger, the women being about 5 feet, 7 inches tall or slightly less. However, my husband has one cousin, a girl, who passed the 6 foot mark and is gigantic for a woman. He himself is large; he weighs 250 pounds and is 6 feet, 2 inches tall. Should a general practitioner be entrusted with such a case?

A. L. H., Idaho.

Answer.—Under certain circumstances, basal metabolism tests may be made for young children. If there is glandular disorder, early treatment is more likely to be effective than late treatment. There is no reason why a competent general practitioner should not be entrusted with a case of this character. If he finds that he desires consultation with a specialist, he will know whom to recommend.

With respect to control of size and height, little is to be expected in the way of glandular or endocrine treatment because while it is known in a general way that the pituitary gland has to do with growth, it is also known that the administration of pituitary extract or treatment intended to discourage excessive activity of the pituitary gland cannot be depended on for success in all instances.

In view of the child's heredity, on her father's side, it would not be surprising if she developed into a tall person, perhaps built on a large scale. While this may seem undesirable to one who conceives of woman as necessarily a dainty creature, it is not in itself a major handicap. It can, however, be made a serious handicap if the mother's concern, which is so emphasized in the letter, is permitted to communicate itself to the child. In other words, if the child is going to be big, it is of the utmost importance that she should not be made self conscious about her size and that the parents should maintain a natural and unconcerned attitude toward that particular matter and that they should be prepared, if necessary, to point out the advantages of robust strength and health.

If the inquirer still desires to consult a specialist, then her safest procedure is to lay the problem before her own physician in whom she has confidence and ask him to recommend a competent and reputable specialist in the field of endocrinology.

Herpes Zoster (Shingles)

To the Editor:—Please give me information about shingles.

R. S. K., Canada.

Answer.—Herpes zoster, or shingles, is another manifestation of the well known "cold sore."

Herpes is a disease which is probably attributable to a toxic neuritis that gives rise to painful areas on which clusters of tiny blisters may appear. It is an extremely disagreeable affliction, but it is not dangerous. Various types of local treatment that will dry up the blisters are suitable. Since there are a great many ways of accomplishing this, it follows that there is no standard. The use of the x-rays in competent hands is safe.

The important part of the treatment of herpes is to find its cause, which is usually in some distant and hidden place as, for example, a sinus infection or some other obscure chronic infection that occasionally breaks out acutely and is followed by an attack of herpes.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Cure for Constipation

To the Editor:—What is the cure for constipation? Does constipation cause hemorrhoids? Is it harmful to take an enema a few times a week?

M. R., New York.

Answer.—There is no one cure for constipation. If the condition is due to bad diet or bad habits, the cure lies in correcting the errors. If it is due to organic disease, such as chronic appendicitis or other organic disease, then that condition must first be corrected. Above all, the use of laxatives must be avoided, except under the instructions of a physician.

Constipation is frequently the cause of hemorrhoids, which often can be relieved by correcting the cause of constipation. In such a case, operation may be avoided. It is impossible to say without seeing the patient whether or not an operation can be avoided.

The occasional taking of an enema is better than the use of laxatives, but an enema habit can be developed the same as a laxative habit can. It should not be necessary to take an enema "a few times a week," and such a practice is not to be recommended.

Pain, Indefinite

To the Editor:—I am a young man, aged 19. My health habits never have been good, and although I used to get plenty of exercise, I do not exercise enough now. For the last year I have been troubled with a dull, heavy feeling in my head. Will you tell me the cause of this condition?

J. E. K., Illinois.

Answer.—Without observation or examination, it is impossible for any one to say what might be the cause of a dull, heavy feeling in the head. Perhaps the explanation lies in the statement that the inquirer's health habits are not good. The mere fact that they have never been good and that he has not suffered until now simply proves that he is young and can take a great deal of punishment. This will not always be the case. A physician should be consulted about the physical condition and his advice as to the correction of health habits should be followed. No medical advice can be given by mail, and reputable physicians do not attempt to do so.

Teaching Sex Hygiene to Boys and Girls

To the Editor:—We are hoping to put into our school curriculum a course in sex hygiene for boys and girls. Have you any book or books that you could recommend, either as textbooks for the pupils or as teachers' manuals?

L. T., South Carolina.

Answer.—The wisdom of putting into a school curriculum a course in sex hygiene for boys and girls is doubtful. Sex is a subject that should be taught in the home. Moreover, it should not be taught in any formal way but in the simple, natural way in which many other subjects are taught. Parents do not, for example, set their children down in a row and teach them manners. They correct their errors and tell them how they ought to act as the occasion arises, and presumably they set an example that will not nullify their teachings. Sex should be taught by answering simply and naturally and with complete frankness, limited only by the child's capacity to understand, the spontaneous questions that will be asked about how life is transmitted from generation to generation. This is a job for the parents.

The fact that many homes neglect this task is recognized, and the desire of the teacher to meet the very obvious need for giving sex education to children is appreciated. At the same time, there are obvious doubts about the wisdom of group instruction, except as a last resort, even assuming that the sexes are separated.

As an alternative a parent-teacher group could be organized, and that group could undertake a course of study on sex education. Thus the parents would be prepared to meet their responsibilities and would be stimulated to do so. Information about books and pamphlets will be sent on request.

Superfluous Hair; Electrolysis

To the Editor:—I am a technician in an x-ray and medical laboratory and should like to ask about the proper treatment for a woman who has a growth of hair that is most prominent on the sides of her face near the ears and on her arms. As time goes on, this condition is becoming worse. The skin of the patient is also very dry. Are there any cosmetics that can be used for permanent removal of this superfluous hair without injury to the skin? Or is this purely an internal condition that would have to be taken care of through correction of organic functionings?

M. K., Minnesota.

Answer.—Electrolysis, in the hands of a qualified physician, is the only safe and permanent means of removing superfluous hair.

In the hands of unskilled operators, electrolysis may leave scars which are worse than the superfluous hair. The safest way to find a satisfactory operator is to go to a physician who specializes in diseases of the skin. There are satisfactory operators in some beauty shops, but one cannot be sure of reliable treatment. The family physician should be consulted first as it is quite likely that he will recommend a skin specialist.

It is possible, of course, to bleach the hair so that it is less conspicuous.

It seems reasonable to suspect that the growth of superfluous hair, when it is not due to developmental defect, may be due to some disturbance of glandular function, but just what this is is not known, and consequently there is no treatment that can be recommended.

Advertising: Misleading Medical Claims

To the Editor:—I have recently noted advertisements in a New York City tabloid of several establishments claiming that all kinds of skin diseases can be cured by their methods. One of these organizations claims to have been in existence for twenty-five years. Are establishments of this type reliable?

E. P., New York.

Answer.—Whenever one reads medical advertising, it is well to bear in mind certain facts.

Reputable physicians and reputable medical organizations do not advertise at all. Reputable medical societies may occasionally publish educational matter in paid advertising space, but that is not the same thing. Moreover, physicians recognize that diagnosis cannot be made by mail and that treatment cannot be advised by mail. Further, it is well known to reputable physicians that treatment cannot be standardized; in other words, it is not possible to prepare a formula, whether an ointment, lotion or internal medication, that will be suitable for all patients suffering from a given disease. Bearing these facts in mind, it should be evident that medical advertising which is addressed to the public should be viewed with the utmost skepticism, unless it is of educational character, offers nothing for sale and is sponsored by organizations of known repute.

The advertising of standard drugs in medical publications for the information of physicians is, of course, another matter altogether.

"Athlete's Heart"

To the Editor:—I was reading an article in *The Journal of Health and Physical Education* by W. E. Forsythe, M.D., of the University of Michigan, in which the opinion was given that athlete's heart is not caused by, or the result of, severe physical strain or improper coaching. I should like to know how the majority of physicians feel on this subject.

J. T. W., Florida.

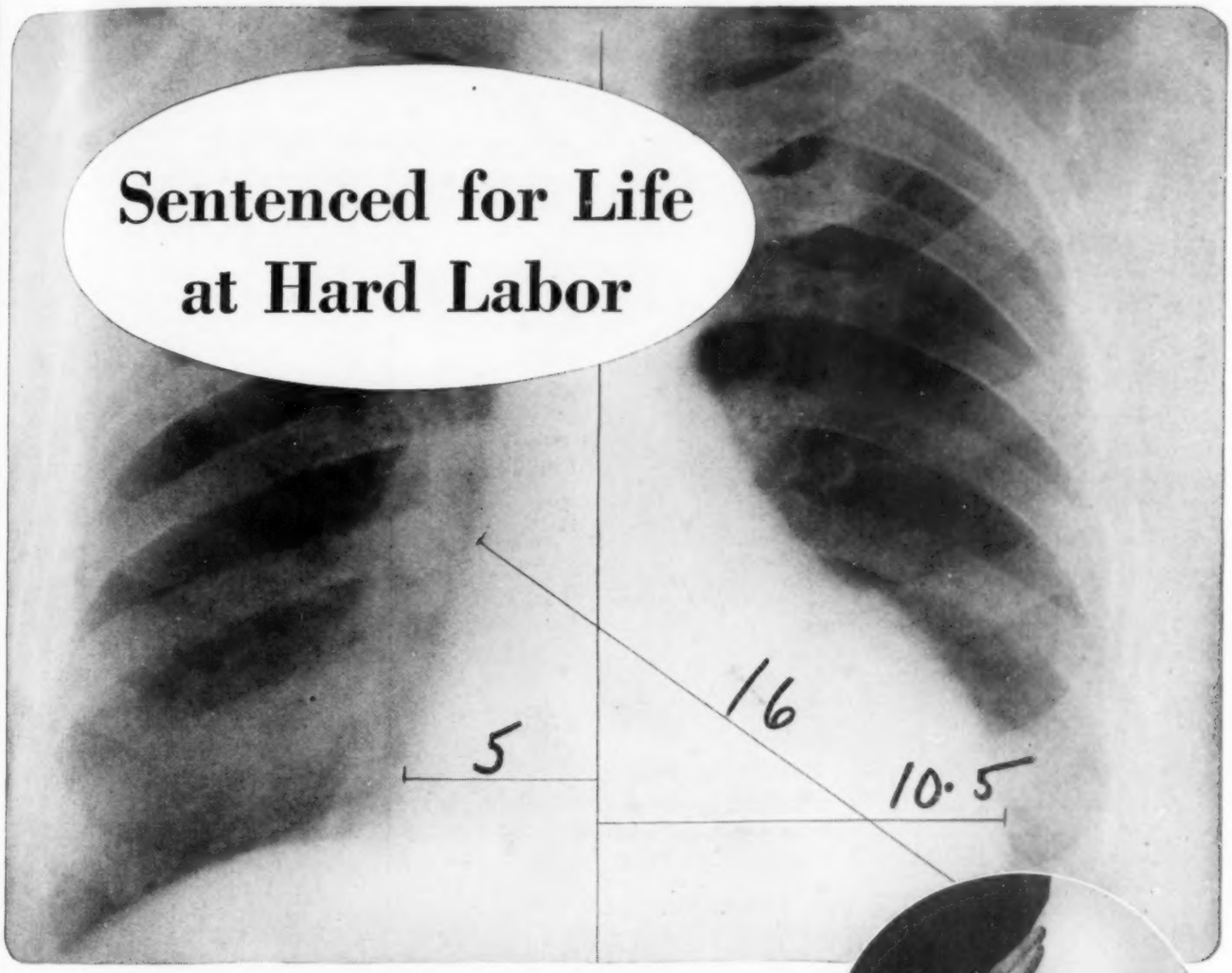
Answer.—The normal heart is capable of responding to unusual effort, and it is doubtful whether such effort ever injures the heart if it has not been previously diseased. Athletes are capable of carrying on the most strenuous types of physical exercise for many years. Marathon runners who have engaged in this most severe type of exercise do not show any changes in their hearts. It is theoretically possible that long continued exercise might produce an enlargement of the heart, but that this enlargement of the heart has any effect on the athlete's health is doubtful. The properly trained athlete, no matter how vigorous the exercise in which he engages, is probably going to live as long as the man who leads a sedentary and quiet life. As a matter of fact, exercise is often good for men and women who have certain types of heart disease.

Soreness and Swelling in the Breast

To the Editor:—A woman, aged 38, suffers from soreness and swelling in the right breast. The breast is slightly lumpy but has no definite lumps. This condition has persisted for about two months. The left breast is slightly sore. She has a fear of cancer; but being in poor circumstances, she does not wish to employ a doctor unless it is necessary to do so. The discomfort could be easily borne if the fear were dispelled.

C. J. B., Michigan.

Answer.—A woman with a moderate swelling and soreness of the breast should consult a physician immediately. Financial circumstances have nothing to do with it, since there is plenty of provision in every community for giving necessary medical care to those who cannot afford it at their own expense. There is only one way to have the fear of possible cancer allayed and that is to be thoroughly examined by a reputable physician. If, on the other hand, he cannot allay the fear but is compelled to make a diagnosis of cancer, then the sooner he does so and the more promptly the growth is removed, the better will be the patient's chance for recovery.



Sentenced for Life at Hard Labor

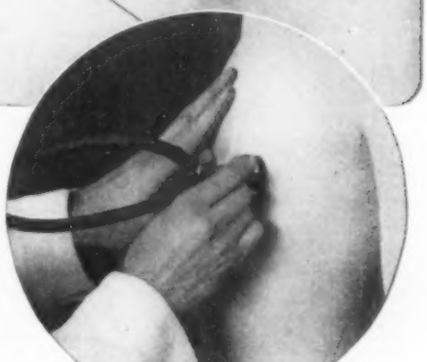
Radiograph of heart with measurements indicated.

PRESENT day pace in business, in social activity, in sports—sentences the heart to a lifetime at hard labor. Telephones jangle—typewriters clatter—business rushes through a mass of complexities. Recreation brings a whirl of social activities or rounds of vigorous sport.

To meet the demands of its busy owner the heart speeds up . . . works under tremendous overloads. What are the results? A tendency to "high blood pressure" . . . an increase in the death rate from heart disease until it ranks first among causes of death.

In addition, heart impairment often develops from unnoticed disorders which follow childhood diseases. Rheumatic fever, tonsillitis, scarlet fever, can have a lifelong effect on the heart's health.

Precautions against heart diseases should begin in childhood. At least once a year all through life there should be a complete health examination. This examination should include x-rays. For radiographs enable your physician to discover early indications of disorder that could be detected in no other way.



Stethoscopic examination (directly above) as well as x-ray examination should be routine measures in an investigation of the heart.

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More than a thousand children a month are killed by accident in our country and more than a hundred thousand are hurt—many of them seriously—in spite of all that has been done by fathers and mothers, teachers and traffic officers to keep boys and girls from being injured.

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Infant Mortality in Relation to Smoking by Mothers

To the Editor:—Some time ago I heard a statement concerning the danger to women, especially young women, through the use of cigarets. This statement pointed out that the health of babies born to young women who had been and still are using cigarets is in a weakened condition at the time of birth and that a large percentage of the babies die before reaching 2 years of age. Is there anything to such a statement; and if so, may I have a copy of such a report? I am interested in knowing whether or not cigarets have a detrimental effect on the health of children born to mothers who use cigarets.

H. T. A., California.

Answer.—In view of the fact that no one knows how many smoking mothers there are, it would manifestly be impossible to have any idea about how many of the babies of smoking mothers are born dead or die soon after birth.

It is known, however, that in each thousand births in the United States there are, on the average, from thirty to forty babies born dead, and approximately the same number die soon after birth; that is, within a month. This is an average for the United States and may differ in various localities. Since only from sixty to eighty babies out of a thousand are born dead or die soon after birth, and since it is known that many of these deaths are not caused by tobacco, it is evident that smoking by mothers is, in all probability, not an important factor in the number of babies born dead or dying soon after birth.

Attention should be called to the fact that smoking by women is not new. In most nations there has been, among women of certain classes, a considerable amount of smoking, including not only cigarets but pipes and cigars. Moreover, any one who lives in the southern part of the United States is familiar with the habit of taking snuff, which is another form of the use of tobacco. The truth is that in the present state of knowledge, it cannot be definitely said what the effect of tobacco on the offspring may be. It would seem reasonable to conclude, however, in the light of what is known, that its influence is probably small.

All this, of course, is entirely aside from the question of smoking by women as a practice that is offensive to the social sensibilities of certain persons.

Physical Therapy—The Elliott Method of Applying Heat

To the Editor:—Can you give me information concerning the Elliott treatment? S. B. H., Iowa.

Answer.—The so-called Elliott treatment is a method of applying heat to the tissues by means of a rubber bag which can be distended and through which water at controlled temperature is circulated. This is used mostly for the treatment of pelvic diseases in women, the rubber bag being introduced into the vagina. Adaptations have been made for use in the nose and in the rectum.

There is nothing new about the use of heat in the treatment of inflammations in the pelvis or elsewhere. The vaginal douche was described by Hippocrates and then forgotten and rediscovered a thousand years later by Galen and Celcus. German physicians in the eighteenth century poured heated shot into the vagina to obtain distention and to maintain prolonged heat. Early in the nineteenth century, hot douches were again advocated. Heat has been found useful in a number of disease conditions.

The apparatus devised by Dr. Charles Robert Elliott appears to be a distinct advance over preceding methods.

All that this means, of course, is that in properly selected cases the use of heat for the treatment of inflammations may be of service.

While the Elliott method is a scientific procedure under proper circumstances, it would, like any other useful remedy, be useless in the wrong place and might be actually detrimental if relied on when other forms of treatment are necessary.

The patient should not attempt to apply the principles of the Elliott treatment but should leave the matter of treatment in the hands of his physician to whom medical literature is available and who, if he considers it wise, may make use of the Elliott treatment or such other treatment as he considers necessary.

"Gray world of winter and green summer hills called 2,030 hikers on 58 trips along pioneer Kentucky trails," states the 1932 report of the division of recreation, Louisville, Ky. "Oldest residents and newest schools and churches of nearby counties welcome the hikers now as good friends, and Saturday night suppers and game parties for hikers and home folks follow each jaunt."

—*Recreation.*

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Vegetables strained and cooked by ordinary home methods lose 20 to 60 per cent of the vitamin content

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The latest facts on baby diet are explained in the new up-to-the-minute 60-page illustrated book, "*Modern Guardians of Your Baby's Health*". It clears up the mysteries of vitamins and minerals, once and for all, with facts from authentic sources, accepted by the American Medical Association Committee on Foods. Send, with the coupon below, labels from three Heinz Strained Foods tins, or 10 cents.

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"Dr. Ira Wile describes the book as a clear, succinct, non-emotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly . . . It is primarily concerned with the conduct of the honeymoon and with the technic of the sexual performance." —Hygeia.

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Do You Know—

1. What causes your hay fever? *See page 508.*
2. How to safeguard your ears on your vacation? *See page 525.*
3. Why you should take an ophthalmic tube of 10 per cent boric acid ointment with you on your vacation? *See page 519.*
4. What to do when your children quarrel? *See page 513.*
5. Why it is important that the person who wears dentures has regular dental attention? *See page 539.*
6. How to use evaporated milk in cooking? *See page 528.*
7. Why ethical doctors do not advertise? *See page 498.*
8. What grade you would get on a health questionnaire? *See page 546.*
9. Why some children do not play with children their own age? *See page 522.*
10. That the Standard Dictionary lists more than thirty degrees that entitle their owners to be addressed as Doctor? *See page 535.*
11. How to determine a recognized specialist in a particular field of medicine? *See page 504.*
12. Why one fumigation is not effective in exterminating the cockroach? *See page 516.*
13. How much the national death rate from tuberculosis has diminished since 1904? *See page 495.*
14. The story of the determination of the blood pressure? *See page 491.*
15. What may be done physically and mentally for the subnormal child? *See page 532.*
16. Why both the shy child and the aggressive child need the nursery school? *See page 542.*
17. Why you cannot taste some things when you have a cold? *See page 552.*
18. How to choose situations and materials for teaching health? *See page 555.*

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PURCHASERS of six Hygeia Nursing Bottles and six Nipples now get a Guarantee against bottle breakage *from any cause whatsoever.* Details in new blue cartons. The Hygeia Bottle has no shoulder or neck to collect *dirt.* No brush or funnel needed to clean or fill it. The Hygeia Nipple does not collect food particles. Patented tab keeps fingers from sterilized inside surface. Patented reinforced base resists nipple collapse. Dirt causes intestinal disorders. Use Hygeia Bottles and Nipples. *Use Hygeia Strained Vegetables too.*

Hygeia *The Safe Nursing Bottle*

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Schools and Camps

Schools for Backward Children

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Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

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A private non-sectarian school for the education and training of children whose minds have failed to develop normally.
Nineteen major buildings, four hundred and forty acres, faculty of nineteen specially trained teachers, resident staff of three physicians. Booklet on request.

E. A. WHITNEY, M.D.
Elwyn, Delaware Co., Pennsylvania

THE DOCTOR—IS HE YOUR SERVANT OR SLAVE?

The Sundays, Saturday afternoons and holidays, which a "tired business man" accepts quite as a matter of course, amount to a vacation of more than twelve weeks in the course of a year which a physician cannot enjoy. For, while it is possible for him to limit his activities on these days to a certain extent, he must always be ready for a sudden call.

Perhaps only doctors and doctor's families can appreciate the strain of this constant state of preparedness. . . .

The impossibility of controlling the emergency nature of many of a doctor's activities has been accepted by that fraternity as part of their work, and rarely will a patient learn from the doctor just what sacrifice is involved if the demand for his service is truly an emergent one.

But for those matters which are not urgent, those routine and incidental medical and surgical needs, which after all are the more common ones, it is entirely possible for the patient to give a greater degree of consideration to the doctor's convenience.

For example, the doctor's office hours are fixed by him at a time of the day when he can by grouping his patients accomplish the greatest amount of work in the least time. Those who demand without good reason that they be seen at other hours are thoughtlessly stealing from the doctor the moments of relaxation which he enjoys as much as does any one else, and needs perhaps more than others. . . .

Then consider the telephone call in the early evening, summoning the doctor to the bedside of a patient who has been ill for a day or two, and not critically ill at that. This visit could easily have been made during the day. . . .

And when the doctor announces boldly that he is going away for a rest, and that Dr. Blank will look after his patients during his absence—then what a storm of protest arises! Each patient is personally insulted to think that the doctor would dream of leaving him until he has recovered. And yet, can a doctor ever go away without leaving behind some patients who need continued attention?

—*Nassau Medical News.*

An Arab proverb runs as follows:

"The world is supported by four columns;
The justice of the great
The prayer of the righteous
The bravery of the valiant, and
The science of the physician."

WELCOME THE SUN *but* DON'T *let it* DRY YOUR SKIN

●

NIVEA Skin Oil, a fragrant, bland liquid cream, will keep your skin soft and smooth, because it contains the exclusive element, Eucerite, similar to the skin's natural lubricant. When your normal supply of this lubricant is lost by work or by exposure to sun, wind and dust, Nivea swiftly replenishes it!

Nivea Skin Oil is most economical in use. A few drops a day is all you need. It makes a delightful, efficient powder base, night cream and cleanser. Doctors and nurses recommend Nivea Skin Oil for the sensitive skin of children.

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I enclose 10c for a generous supply of Nivea Skin Oil.

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"NERVES" IN TEACHERS

The clientele of any psychiatrist or physician contains a generous sampling of teachers. It is sometimes difficult for those whose business calls for considerable physical exercise relatively uncomplicated by problems of nervous balance to understand why teaching is really hard work, but from the standpoint of nerves it is hard work and among the occupational diseases of teachers must be listed neurasthenia. The teaching situation, itself, is provocative of continuous attention. Then again, many of the routine duties of teachers, such as the correction of hundreds of papers, result in the usual nervous concomitants, such as headaches.

The obvious antidote, of course, is to get as far from the situation as often as possible. Thus many teachers who stay in the best condition year after year are frequently found in the summer in widely diverse environments which sometimes afford a bizarre contrast to teaching. Mountaineering, camping, traveling, hunting, fishing, golfing, exploring, etc., all have a hygienic as well as recreative value.

—*Washington Education Journal.*

MEDICO'S MOTHER HUBBARD

Old Mother Hubbard she went to the cupboard
To get her poor doctor his fee,
But when she got there the cupboard was bare;
The reason for it you see:
The butcher, the baker, the old shoemaker,
The landlord and bootlegger, too,
The druggist, the grocer, the butler and chauffeur,
Must all come in for their due.
The yardman, the maids, first, second and third,
Must be paid at the end of each week;
A new rug, a new sweeper, a cage for the bird,
And the plumber who stopped up a leak;
The patient and generous furniture man
Who furnished the house near complete,
On the simple and easy installment plan;
The chiropodist who cares for the feet,
Must all be paid—the doctor can wait—
We assume he has money to spare;
The doctor is left to unkindly fate.
And most people don't seem to care.

—*St. Louis Medical Society Bulletin.*

A HOUSEWIFE LOOKS AT THE COMMITTEE ON FOODS

(Continued from page 536)

milk will keep on the grocer's shelf for two years or longer, regardless of high temperature and high humidity, it is safer to store the milk for long periods of time at lower temperatures.

It is required that evaporated milk purchased by the U. S. Government for the Army and the Navy and for other purposes according to specifications of the Federal Specifications Board shall have been manufactured within three months prior to delivery and that it shall be of standard quality and shall bear the regular trade label of the packer or distributer, showing nature of contents, brand and net weight, and that it shall be guaranteed against granulation and sedimentation for one year after delivery. The only evaporated milk with which the housewife is familiar is of good quality, but federal specifications guard against bad manufacturing practices which would result in inferior quality in order to make a low bid for a large order. It is now common knowledge that freezing evaporated milk does not hurt it in nutritional value or physical characteristics, although warehouses avoid freezing temperatures.

The same executive who explained the production of evaporated milk to me stressed the fact that sanitation of the plant is essential to economy of operation. If a certain type of mold, yeast or bacterial growth should get started, it would be difficult to eradicate it, and the flavor of a large batch of milk might be ruined. Hence it is cheaper, as well as better, to keep the plant clean, and that implies a higher standard of cleanliness than is practiced in the ordinary home kitchen. Every piece of equipment must be cleaned after it is used, scrubbed with washing powder, rinsed with clear water and then subjected to live steam. It is possible to produce sterile evaporated milk only when the resistant types of bacteria are avoided altogether. I asked my informant why the company claimed milk of a superior flavor, and he explained that it was due to the most careful control of the milk before it reaches the plant, careful handling, exact degree of heat, and cleanliness throughout. One can readily see how milk, which absorbs "off" flavors in the home refrigerator by too close proximity with cabbage or fish, could easily become "off" flavor in any stage of the handling.

I was amazed at the difference in flavor of the various brands of evaporated milk, because I had always used it successfully in cooking and had not made any particular comparison between brands. My son liked the milk that had a more distinct caramel flavor, undoubtedly caused by heating it to a higher temperature, while I preferred the milk that more nearly resembled raw milk. Thermostatic control of the sterilizer avoids too high temperatures. The housewife will find it interesting to try the various brands which have been accepted by the Committee on Foods of the American Medical Association, in order to find out which flavor best suits personal preference; this experiment will prove especially valuable if the milk is to be diluted one-half to serve as a beverage. The evaporated milk thus diluted is equivalent to "legal" milk in all states. Compared with market milk, this diluted evaporated milk is almost invariably cheaper.

Most evaporating plants pack but one grade of evaporated milk, but it is put up in cans of three sizes: the 14½ ounce, or tall size; the 6 ounce, or baby size, and the 1 gallon size, called "confectioner," for the large number of confectioners, bakers, ice cream manufacturers and hotels that use evaporated milk. The companies pack the same grade of evaporated milk under various brand names of their own, and also under some jobbers' labels that have been accepted by the American Medical Association's Committee on Foods. In such cases there is an agreement between the packer, the jobber and the Committee to the effect that the jobber will purchase his entire supply of evaporated milk under the label in question from the one source, and that the packer will pack under that label only milk which has been found worthy of bearing the Seal of Acceptance of the Committee on Foods.

According to a statement accepted by the Committee on Foods, evaporated milk is equal to pasteurized milk in all important food values; it supplies those vitamins which milk can be depended on to supply and in practically equal quantity. Vitamin C is not present in any dependable or appreciable quantity in evaporated, pasteurized or raw milk. Physicians recommend the addition of orange juice, tomato juice or pineapple juice to the baby's diet at a very early age, in order to furnish an adequate supply of vitamin C; and of course older children and adults are supplied with this vitamin in a mixed diet. In a similar manner, cod liver oil is added to the baby's diet to furnish vitamin D. The addition of a vitamin D concentrate, in tasteless form, to evaporated milk is a new phase of production which is useful. I plan to discuss this vitamin more thoroughly in a later article on the work of the Committee on Foods.

Evaporated milk compares favorably with pasteurized milk in vitamin A and vitamin B content. A milk diet is not a complete diet, and it should be supplemented with other foods. For the first few months the infant can get along satisfactorily with milk, orange juice, tomato juice and cod liver oil; but a food, such as liver extract or spinach, should soon be added to the diet to furnish iron, and the child soon needs some food such as sieved fruit or vegetable pulp to furnish bulk so that he may avoid constipation. The child, the adult and the invalid all need some foods besides milk, although milk is the most nearly complete single food. The average composition of evaporated milk is as follows: fat 7.8 per cent, protein 6.8 per cent, lactose 9.7 per cent, ash 1.5 per cent and water 74 per cent. The value of milk in the normal diet is so well realized by every physician, nurse, dietitian, teacher and mother, that it will suffice to say that evaporated milk is valuable and dependable nutritionally. Milk is valuable for its calcium, phosphorus and protein content.

Other statements which have been accepted by the Committee on Foods of the American Medical Association follow:

Evaporated milk is more speedily digested than raw or pasteurized milk or milk boiled only a short time.

The fat of evaporated milk, because of the homogenization processing, is more finely dispersed than the fat of ordinary milk and therefore is more readily acted on by digestive enzymes.

The curd of evaporated milk in the stomach has a softer and more finely grained texture or structure than that produced from raw or pasteurized milk; it resembles in physical structure the curd of human milk.

Evaporated milk is considered by many pediatricians to be the best form of cow's milk for preparing the baby's formula.

Evaporated milk is usually less allergic than raw or pasteurized milk.

Evaporated milk is one of the most convenient and economical forms of milk for preparing infant feeding formulas.

The uniform composition of evaporated milk is a tremendous help in infant diets, since the baby's

(Continued on page 571)

EXPECTANT MOTHER'S DIET AFFECTS APPEARANCE OF CHILD

Heredity has much to do with the determination of the looks of a baby, but even heredity may be almost defied by the expectant mother if she regulates her diet so as to insure well formed bones and teeth.

The expectant mother's choice of a beautiful or a homely child is discussed from this angle in the *Virginia Health Bulletin.* The mother's responsibility for the appearance of her child is divided into three periods: the prenatal, or the nine month period before the child is born; the nine month period of breast feeding, the period of cutting the temporary teeth; and, third, the development period of the permanent teeth, this period lasting almost through school age. Then the individual must take over the fourth period and assume the responsibility for the care of his teeth for the remainder of his life.

The material for the construction of teeth and bones consists of 85 per cent lime with a small proportion of phosphorus and other substances. As the child's teeth are in process of formation long before the baby is born, the mother's blood must supply these minerals. Therefore, for the child as well as for her own needs, the prospective mother must see that milk, leafy vegetables and whole grain bread and other whole grain cereal foods are a part of her diet.

During the next period, if the child is still dependent on his mother for natural nourishment, she must take an intelligent interest in regulating her diet and her mode of life for the best interests of the child. Also during this nursing period if the mother prevents thumb-sucking and the use of the rubber pacifier, she has done much to prevent a deformed and unattractive mouth and features.

The third period, that of the development of the temporary teeth, should come within 20 to 32 months. It is during this time that teeth are most often neglected. It is the mother's responsibility to train the child in the same food habits that have been prescribed for her. Exercise for the teeth, jaw and muscles of the face may be provided by foods that require much chewing.

At the age of 3 years the child should be caring for his own teeth with regular brushing and regular visits to the dentist, both supervised by the mother.

When the individual assumes responsibility for the care of his own teeth in the adult or fourth period, he must remember that correct diet is still most important.

Hello June Babies

Your Birthstone is . . . THE PEARL • Your Birth Flower is . . . THE HONEYSUCKLE • Your Famous Birth-Month Companions are: NATHAN HALE • JOHN WESLEY • JEFFERSON DAVIS • WINFIELD SCOTT • CYRUS H. K. CURTIS • HARRIET BEECHER STOWE BRIGHAM YOUNG • OTIS SKINNER HENRY WARD BEECHER • MADAME SCHUMANN-HEINK

WELCOME, June Babies, for during the years to come you're going to mean a lot of joy and pride to a lot of fathers and mothers everywhere.

You and your mothers may have the impression that early summer's a bad time to come into the world. Maybe it used to be true—but not so today. With all the modern, scientific advantages doctors now have, it doesn't really matter whether you're born in June or December.

Just about the time the first frost comes, your doctor's going to say, "Hmm, better start him on strained vegetables." And perhaps even before that he's going to prescribe strained cereal. That's when we want your mother to remember Gerber's famous Strained Cereal and Strained Vegetables.

Gerber's Vegetables are the finest that can be grown. Special exclusive processes make them different from all other infant foods. Cooking with oxygen excluded conserves their valuable vitamins to a high degree. Minerals, too, are saved in the Gerber processes. Unseasoned—so your doctor can regulate the seasoning according to your personal requirements!

Strained Tomatoes . . . Green Beans . . . Beets . . . Vegetable Soup . . . Carrots . . . Prunes . . . Peas . . . Spinach . . . 4½-oz. cans. *Strained* Cereal . . . 10¾-oz. cans.

The Gerber Baby Presents
Madame Schumann-Heink
The world's most famous mother—the world's best loved singer—in a series of programs you will cherish as treasured memories.
NBC Blue Network, Sunday Evening, 10 P. M., Eastern Daylight Saving Time. See local papers for time and stations.

Gerber's

Ask Your Doctor H-6

9 Strained Foods for Baby

GERBER PRODUCTS CO., FREMONT, MICH.
(In Canada: *Grown and Packed by* Fine Foods of Canada, Ltd., Windsor, Ont.)
Send me free copy of "Mealtime Psychology." 10c enclosed for birth-month data and Gerber Baby picture.

Name.....
Address.....
City..... *State*.....

MEDICAL MEN WHO HAVE BEEN INVENTORS

Medical men who have achieved distinction in fields other than medicine furnish interesting biographic material for a recent book, "The Physician as Man of Letters, Science and Action," by Thomas Kirkpatrick Monro.

An editorial in *The Journal-Lancet* refers concisely to those doctors who entered the field of invention. Joseph Ignace Guillotin (1738-1814) and Richard Jordan Gatling (1818-1903), both men of humane instincts, nevertheless have had their names attached to the instruments of death which they devised. The late Dr. A. D. Rockwell of New York, himself opposed to the death penalty, invented the electric chair, and execution by lethal gas was also first proposed by physicians.

John Gorrie (1803-1855) originated the first machine for making artificial ice.

Among English physician-inventors are Nicholas Barbon (d. 1698), son of Praise-God Barebones, originator of fire insurance; Timothy Bright (1551-1615), the inventor of modern shorthand; Charles Brooke (1804-1879), who invented self recording instruments such as thermometers and barometers; George Borlase Shields (1816-1888), for over forty years surgeon to the London police and inventor of the modern police helmet, and Henry Faulds (1844-1930), inventor of the finger print method of identification.

Sir Goldsworthy Gurney (1793-1875) devoted most of his life to invention, principally in the field of locomotion. He invented the oxy-hydrogen blowpipe and the steam jet, besides suggesting many important improvements in lighting, sewerage and ventilating systems. Charles Morrison, who lived in the eighteenth century, was the inventor of the electric telegraph. Alfred Smee (1818-1877), inventor of the Smee battery, made notable researches in chemistry and electrometallurgy. He also invented permanent ink and perfected the present system of printing checks and bank notes, improving the latter so that they could not be split.

James Syme (1799-1870), well known surgeon, devised a process of dissolving rubber in naphtha for the purpose of rendering clothing impervious to water. Five years later, Macintosh took out a patent and received all the credit.

For the sake of health, medicines are taken by weight and measure; so ought food be, or by some similar rule.—*Skelton.*

AIR SICKNESS IS RARER THAN TRAIN SICKNESS

There are no valid reasons why air travel should be regarded as harmful to health, says an article in *Good Health.*

The prospective air traveler is usually confronted by the bogey of air sickness, a malady supposedly as bad as sea sickness. Air sickness, however, is comparatively rare; train sickness, which few travelers experience, is more common than air sickness.

The strongest argument against the avoidance of air travel for health reasons is provided by the fact that this mode of travel is used in cases of serious illness. The British Red Cross has recently inaugurated an air ambulance service, a proof of the small discomfort created by air travel.

Flying has also been found by some passengers to be a cure for the condition commonly called "nerves." Once the fear of mechanical mishap has been suppressed, air travel seems safer than road travel with its crossroads and winding highways. The sense of speed, a further cause for nervousness in road travel, is also almost absent, for although the plane may be traveling at 100 miles an hour, the sensation is that of a crawl because of the distance from stationary objects by which the speed can be judged.

Some of the feeling that flying is bad for the health no doubt has arisen from the knowledge that fitness tests are imposed on pilots. The purpose of these tests, however, is simply to insure that pilots have the necessary faculties to handle airplanes.

A HOSPITAL ON WHEELS FOR MANCHURIA

The South Manchurian Railway Company will soon begin to operate a hospital of seven cars, which, with a staff of two physicians, trained nurses and hospital attendants, will visit isolated stations on the Manchurian railways for the purpose of rendering medical aid to those in need of it. One of the cars will be equipped as a cinema for the showing of health films.

Sickness is very wasteful of time and money, as well as a disagreeable and alarming experience. It cuts off income and increases expenses. It threatens all that we hold most worthwhile—our ambitions, careers, usefulness to the community; our homes, friends and families. It is the greatest obstacle to a serene, happy, contented, useful life.—*Franklin D. Roosevelt.*

Beautify and Protect Your Skin with Elmo

BEAUTY PREPARATIONS

Give your skin proper care with Elmo cosmetics and its loveliness will repay you. But be sure to use Elmo preparations. They do not contain a single ingredient that could possibly harm the normal skin. In fact, they are as pure as it is humanly possible to make them. And there is an Elmo preparation for every beauty need:

RA-LO LOTION—Foundation cream—to be used as powder base.
MELTING CREAM—Quick cleansing cream—liquefies quickly.
CLEANSING CREAM—Deep pore cleanser—with vegetable oil base.
HERBAL TINCTURE—An astringent—to improve oily skin.
RA-LO FACE POWDER—Our finest powder—in five shades.
CUCUMBER CREAM—Soothing lotion—may be used as powder base.
TEXTURE CREAM—For softening the texture of the skin.
SKIN FRESHENER—A mild astringent—cooling and stimulating.

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Is Your Baby Troubled with I-C INDIGESTION CONSTIPATION

Exercise Often Helps!

Babies need exercise the same as grown-ups to prevent Indigestion and Constipation troubles. In a Teeterbabe, baby can exercise to its heart's content, developing its muscles and aiding its little organs to function. Physicians endorse it highly for this reason—also because it does not suspend baby by the crotch.

Three Articles in One

A jumper that can be used indoors or outdoors. An auto seat that combines safety and comfort. When placed on an arm-chair, it serves as a high chair.

The **TEETERBABE** **JUMPER SEAT**

Write for Circular Giving Complete Facts

NATIONAL PRODUCTION CO.
4578 St. Jean Ave., Detroit, Mich.

Did You See the Transparent Man?

If you attended the World's Fair you probably did. Anyway, you can read about this and other medical marvels in a new booklet on "A Century of Progress in Medicine." It contains all the material on this subject which appeared in HYGEIA during a Century of Progress Exposition—an editorial by Dr. Morris Fishbein, an article by Dr. Thomas G. Hull, and numerous pictures of medical exhibits and other views from A Century of Progress. This beautiful booklet of 20 pages is printed on heavy, glossy paper. Size, 8½ x 11½ inches.

25 cents a copy. Order from

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

MOTHER'S MARTYRDOM IS PART OF ADOLESCENT FREEDOM TREND

"What a perfectly terrible nuisance grown-ups are!"

Such is the widespread cry, and the revolt of the 15 year olds is on! Its proportions are staggering, and the new attitude is reaching school girls in every social stratum but particularly in our "best circles."

Marian Purcell in *Scribner's Magazine* calls the trend startling and attributes it to the tolerance of parents too indolent for the strenuous job of correcting it and too vain not to want to be "modern" in the eyes of their children and their contemporaries.

She shows through many familiar examples the passion for freedom and complete independence that is sweeping young people off their feet. Her own 15 year old daughter, of eminently fine background and breeding, casts all aside to develop her "line," she regrets. "Lines" of inscrutability, of "wisecracking" and of "treating 'em rough" have all been adopted by her daughter and her friends.

One phase of the new freedom she finds agitating most mothers is the problem of "necking parties." It is after revelations of prep school boys who carry pocket flasks and of prep school girls who revel in shoddy fiction on the "facts of life" that mothers must tighten the reins and attempt to make their own daughters understand why they cannot give them all the liberty they are demanding. There is always that quality of imitativeness in the 15 year old which is the greatest danger. It applies as much to behavior within groups as it does to the wearing of identical clothes, the adopting of a manner of speech and of pet phrases and slogans.

But even today's favorite hectic diversions are quite restful when compared with the more important problems of the mother whose ears are assailed daily by the cry, "But all my friends' mothers let them!" By persistence in her denials she not only risks losing the respect of her friends and neighbors but the affection of her daughter.

"Just that risk is run by the mother or guardian who today attempts to control and direct the young," Mrs. Purcell concludes. "Those young sincerely believe themselves to be martyrs. From their viewpoint they are cut off, by their elders' narrowness of outlook, from the diversions and companionship of their friends. But the conscientious elders must be the martyrs—and who is looking for martyrdom nowadays?"

A HOUSEWIFE LOOKS AT THE COMMITTEE ON FOODS

(Continued from page 568)

delicate stomach is so easily disturbed.

The foregoing facts forcefully set forth the reasons why evaporated milk is recognized by pediatricians as an ideal food for infants. Much research work on the feeding of infants has furnished conclusive proof of the value of evaporated milk. The attending physician should diagnose the condition of the infant and prescribe the exact formula for feeding. Evaporated milk is also useful in the diet kitchen of a hospital.

One point which is not clear to some housewives is that, while evaporated milk will keep perfectly within the sealed container, it should be refrigerated as soon as the container is opened. A pitcher recently designed is useful for keeping canned milk in the home. Two holes are punched in the top of the can, and the can is placed in the pitcher so that the lid of the pitcher protects the holes from the air afterward, and the milk is poured directly from the can. Milk may be left in the can provided it is kept cold; but when the can is only partially filled and exposed to air, rust spots may form on the tin in the moist atmosphere above the milk. While rust in contact with milk is entirely harmless, it imparts an objectionable "old" flavor, and this can be completely avoided by emptying the milk into a glass or a china container. The milk should be kept cool the same as fresh milk.

In some cooking uses it is desirable to dilute the milk with two parts of water instead of with one part as when it is being prepared for a beverage. On the other hand, it is possible to use the milk undiluted in many recipes when it is desirable to add more calories and more of the nutritional values that milk supplies. The Committee on Foods has accepted the statement that evaporated milk enables introduction of more milk in the diet because it is more concentrated than ordinary milk.

One should avoid, however, trying to double the quantity of evaporated milk in cakes or delicate baked foods where the texture is likely to be affected. Undiluted evaporated milk in a cake recipe has much the same effect as an extra egg in toughening the cell walls of the cake. In recipes where the evaporated milk flavor will be too noticeable, the amount cannot be so readily doubled; but in many recipes, such as in cocoa and chocolate puddings, the amount of milk may be increased by using the evaporated milk without dilution.

Another statement accepted by the Committee on Foods reads: "Evaporated milk whips. Because of the homogenization it produces a 'buttery' flavor and a characteristic texture and consistency in foods in which it is used. In fudge, for instance, a greater creaminess is produced, and it is not necessary to use any butter, provided a small amount of salt is added to the fudge; ¼ teaspoonful of salt should be used for 2 cupfuls of sugar and ⅔ cupful of evaporated milk. It may be used in any crystalline candy to produce a fine texture. Cream soups in which a strong flavored vegetable is used are particularly fine when evaporated milk supplies the creamy flavor and texture. Liquid drained from the cooked vegetable is used instead of plain water to dilute the milk."

To prepare evaporated milk for whipping, first moisten ½ teaspoonful of unflavored gelatin with 2 teaspoonfuls of cold water. Scald 1 cupful of evaporated milk in the top part of a double boiler. Dissolve the softened gelatin in the hot milk. Do not remove the film that forms on the top of the milk and the bottom and sides of the pan, since it may be beaten into the milk and is a part of the valuable protein. Heat the milk thoroughly, barely to the boiling point, but avoid long heating. Remove the double boiler from the fire; pour out the hot water from the lower part, and fill it with ice. Put the top part of the double boiler in place, and let the milk cool quickly, to about 50 F.; then whip it immediately. Add vanilla and sugar as desired. A small amount of powdered, chocolate flavored malted milk is an excellent addition to this whipped cream. If a heavier whip is wanted, use 1 teaspoonful of gelatin.

The Evaporated Milk Association has, for free distribution, a number of leaflets on various phases of nutrition, infant feeding, special hospital diets, school lunches, welfare suggestions and household uses for evaporated milk; all are authentic from the educational standpoint. The booklet on ice-frozen desserts is particularly attractive to those housewives who have no ice cream freezer or no husky young son who wants to turn the crank. A number of interesting flavors are suggested for combination with evaporated milk in frozen desserts, including maple sugar, brown sugar, caramelized cane sugar, prunes, oranges, bananas, pineapple and nuts. Definite proportions of ingredients, the mixing method and the freezing directions are given. Whipped evaporated milk may replace whipped cream in recipes offered by the various refrigerator companies.

When a recipe calls for sour milk, add 1 tablespoonful of vinegar to ½ cupful of evaporated milk diluted with ½ cupful of water. When sour cream is called for, add 1 tablespoonful of vinegar to 1 cupful of undiluted evaporated milk, and for all practical purposes in baking, you will obtain the same result. Often this use of evaporated milk is convenient when one wishes to make a favorite spice cooky or gingerbread and finds that there is no sour milk in the refrigerator.

An eggless mayonnaise using evaporated milk is made in exactly the same manner as an ordinary mayonnaise, and it will become thick and fine. Sift together ½ teaspoonful of salt, ½ teaspoonful of dry mustard, ¼ teaspoonful of paprika, ¼ teaspoonful of granulated sugar and a few grains of cayenne. Gradually add 3 tablespoonfuls of evaporated milk, and blend the mixture thoroughly. Beat in gradually ¾ cupful of salad oil and 2 tablespoonfuls of lemon juice, adding a small amount of each, alternately, and beating continuously. This dressing may be seasoned with chili sauce, catsup, chopped pickles or minced green peppers.

Perhaps the most important household use of evaporated milk is in feeding the baby. The latest styles in infant feeding equipment include bottles of the 8 ounce and 6 ounce sizes, in two styles. Nipples have a new feature, an extra hole on the side to admit air, so that the nipple does not stick, and the baby does not swallow so much air with his meal and have "colic." The bottles are rounded on the inside for easy cleaning, and they may be heated and cooled with less danger of breakage than is possible with ordinary glass. Oven glass dishes are good to use in storing the boiled nipples. New rubber covers for the bottles allow the baby to hold the bottles much more easily than slippery glass; the covers also keep the milk warm longer.

Many of the evaporated milk companies have such excellent recipe and menu suggestions that I feel it is worth while to get the list of brands of evaporated milk accepted by the Committee on Foods of the American Medical Association and then send to the various manufacturers for these valuable food suggestions.

[NOTE.—The list of accepted brands of evaporated milk will be sent on receipt of six cents in stamps. In the July HYGEIA, Mrs. McCray will discuss fruit juices accepted by the American Medical Association's Committee on Foods.]

INHERITANCE OF DISEASE AND CONSTITUTIONAL RESISTANCE

Conclusions drawn from experiments to determine to what extent and under what circumstances cancer, tuberculosis, goiter and syphilis are inheritable show that in the production of disease the relation of environment and disease-inciting agents to the constitution is such that only when a balance between them is disturbed do the symptoms of the disease appear.

The susceptibility to cancer in the offspring is higher when both parents are themselves susceptible to tumor growth, for the constitution of the individual is quite as important for the progress of the disease as the internal factors that promote abnormal growth. Although various attempts have been made to demonstrate the effect of inheritive susceptibility to tuberculosis, in this disease, as in cancer, the constant mixture of resistant and susceptible strains makes it difficult to assert that any given individual is susceptible or resistant.

Goiter occurs when the iodine in the environment is insufficient to supply the prodigal thyroid gland, although it may be sufficient for the thrifty thyroid gland. It is thus seen that constitution plays quite as important a part in the result as environmental conditions. Syphilis and a number of other diseases may be passed from generation to generation by infection and belong to quite a different class from hereditary diseases.

According to an article in *Scientific American,* it is for those who suspect a weakness or susceptibility to any of these diseases to maintain, by such methods as are available, such constitutional resistance as they may. It is for those who recognize their own constitutional insufficiency to avoid intermarriage into a family with a similar weakness, in order that the children may not receive a double dose of this susceptibility.

Kindergartens have been dropped from the program of education in some communities. This is not economy. Young children, particularly in the congested areas of our cities, need now more than at any other time the service which the schools can offer. It is precisely at this time that their homes are least able to care for them and to provide for them the activities and the social contacts which are essential for their normal growth and development.

—*George D. Strayer.*

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EVANSTON, ILLINOIS, WINS NATIONAL SAFETY PRIZE

Evanston, Ill., has been named winner of the 1933 National Traffic Safety Contest sponsored by the National Safety Council. More than 300 American cities competed in the second safety campaign, and the enrolment for 1934 is 50 per cent greater than that of 1933.

During the year, only five persons lost their lives in Evanston through traffic accidents, a record made the more remarkable by the heavy traffic between Chicago and the north shore suburbs and the greatly augmented travel because of A Century of Progress.

Other winners in the six population groups, in addition to the grand prize winner, were Milwaukee; Providence, R. I.; Grand Rapids, Mich.; Fond du Lac, Wis., and La Grange, Ill.

The grading schedule was as follows: accident record, a maximum of 50 points; accident reporting, a maximum of 5 points; traffic planning, a maximum of 10 points; traffic law enforcement, a maximum of 15 points; child safety, a maximum of 10 points; public education, a maximum of 10 points, and community safety organization, a maximum of 10 points.

Results of the first two contests have proved definitely that the spur of competition actually means a saving of life. The average death rate of cities competing in the contests has been well below that of the nation as a whole.

CHILDREN WITH IMPAIRED HEARING ARE STUDIED

According to a recent estimate, there are about 300,000 school children today whose hearing is so seriously impaired that they need special educational attention. The aim of a survey being conducted by the Federal Office of Education, through a grant from the Civil Works Administration, is to throw light on the solution of this problem.

To determine the types of occupations for which young people who have suffered loss or impairment of hearing can be successfully trained, and to discover employment possibilities for them today will be the immediate outcome of the survey, but it is expected that much information which will be of value to educators of the deaf and hard of hearing will also result. It will doubtless have a direct bearing on the educational program provided for such children in the schools.

There are approximately 65,000 blind persons in the United States.

SCHOOL AND HEALTH

(Continued from page 559)

NEW HEALTH BOOKS for teachers and pupils

AT A TIME when medical writers such as De Kruif and others are playing up the dramatic episodes in medicine and hygiene, the place of dentistry has been almost entirely neglected. Although writing with the carefulness and precision of a scientist, Dr. Miner, dean of the Harvard Dental School and professor of clinical and oral surgery in Harvard University, offers in "The New Dentistry, a Phase of Preventive Medicine"[1] a brief sketch of the beginnings of dentistry and its problems and achievements down to the present day. It challenges the interest of the general reader as well as of those who are professionally concerned with health.

Although dental caries is largely a disease of civilization, Dr. Miner finds that the medical problems of the teeth started 100,000 years before history began, for Rhodesian man was afflicted with this malady. It was also found among those animals which preceded man. Dental art was the result of the primeval needs of man, needs such as adornment, utility and health. Remarkable examples of dentistry are found in ancient tombs. At the time of the Caesars, artificial teeth were common and aroused satirical comment. The poet Martial, who lived in the time of Nero, referred to the efforts of the belles of his day to maintain their charms by wearing false teeth. He said, "The belle lays down her teeth at night just as she does her silken robes."

Dental ailments have now become the most nearly universal maladies of our civilization. About one fourth of the people in America receive dental care and are spending on their teeth a sum of money that is equal to four and a half times as much as the British war debt. The mass of dental ailments is so stupendous that Dr. Miner does not see any way of dealing with them by ordinary curative measures and looks forward to preventive dentistry as a method of solution. After reviewing in a brilliant fashion the whole history of dentistry, he concludes that man is not yet in possession of the knowledge or the art to prevent dental caries.

1. By Miner, Leroy Matthew Simpson. Cloth. Price, $2. Pp. 219. Cambridge, Mass.: Harvard University Press, 1933.

THESE 2 NEW DEODORANTS WIN THE EASY-TO-USE PRIZE

WHY do the world's leading fashion shops, from Paris and London to Fifth Avenue and Hollywood, *feature* Perstik and Perstop? It's because these deodorants are right up to the minute, modern . . . with a dainty, easy method of application. Their improved scientific formulas never fail to give the protection you seek.

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Perstop is for the woman who perspires more freely and must stop underarm moisture as well as odor. Simply touch the sponge-necked bottle itself to the armpits . . . just enough comes out to protect against perspiration for several days. No separate applicator or cotton to use. It is simplicity itself.

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SCHOOL AND HEALTH

Up to this time there has been little of an historical nature on the subject of dentistry that teachers could use in their classes. This interesting little book by Dr. Miner offers valuable material which can be used with profit in advanced classes in hygiene and also in the grades.

ALL TEACHING must be based on a theory or theories as to how the child learns. This learning begins as soon as he is born. One of the tragedies of life is that so many children need to unlearn before they can really learn some things. The aim of the teacher and parent should be that of getting the child to learn the right reactions at an early age so that relearning with its waste and pain may be avoided. Dr. Lovisa C. Wagoner sums up in admirable fashion, in "The Development of Learning in Young Children,"[2] the researches on this subject. The illustrations of child learning are drawn largely from nursery school situations.

THE END of "the noble experiment" finds the state department of education of Massachusetts well prepared to undertake temperance instruction in accordance with the laws on its statute books, laws which have been generally disregarded since the era of prohibition. Carefully planned outlines have been worked out for the grades in a "Manual for Teaching the Effects of Alcohol, Stimulants and Narcotics upon the Human Body."[3] The statements avoid exaggeration and are based on well known scientific facts.

AGAIN Dr. James A. Tobey sings the praises of milk, and as usual he does it most effectively. From the time the reader begins these popular essays on milk until he finishes them there is no lagging in interest. Interesting scientific facts and dramatic incidents crowd the pages. Every teacher who wishes to have at hand interesting material not found in regular textbooks to enliven her health lessons will want to read "Milk, The Indispensable Food."[4]

2. By Wagoner, Lovisa C. Price, $2.50. Pp. 322. New York: McGraw Hill Book Company, Inc., 1933.

3. The Commonwealth of Massachusetts Bulletin of the Department of Education, Boston, 1933.

4. By Tobey, James A. Price, $2.25. Pp. 197. Milwaukee: Olsen Publishing Company, 1933.

GOOD LOOKS ARE ALSO IMPORTANT

. . . . . and herein Chewing Gum, especially during the years of childhood, may materially aid in the perfect development of the shape of the face.

Although Chewing Gum is purely and simply a pleasure item, dentists point out that it is excellent for the teeth if consistently enjoyed 5 to 10 minutes after two meals a day (preferably after breakfast and supper). From the standpoint of Good Looks, the sheer exercise from the chewing helps to properly develop the mandible and maxillae. Much of the crowding and overlapping of teeth (never attractive) might be traced to lack of exercise for the first teeth and young permanent molars. Correctly formed jaws directly influence not only the well shaping of the face but the structure of the entire head. Encourage children to chew gum. *There is a reason, a time and a place for chewing gum.*

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